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The primary purpose of the Education Advisory Committee is to indicate priorities for the allocation of resources by the Appalachian Regional Commission and states of the region. Planning and study by the Committee has been directed to 4 general areas: pre-school education, elementary and secondary education, higher education, and occupational preparation. Following a discussion of each of the first 3 areas, the major portion of the report is concerned with manpower needs of the region and current programs for occupational preparation since it was felt by the Committee that improvement in this area would have the greatest economic and overall effect on the region. Appendix titles are: A Suggested Way To Relate Employment Trends and Vocational Education Planning; Historical Problems, Definitions, and Critiques of Current National Programs; and Formation and Operations of State Education Committees. (DK)

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APPALACHIAN REGIONAL COMMISSION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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THE APPALACHIAN REGIONAL COMMISSION

EDUCATION ADVISORY COMMITTEE

INTERIM REPORT

Most of the modern innovations in education in America are attempts to return to the best qualities of the one-room rural school. Appalachia has a unique opportunity to avoid false paths of the past hundred years and to create an educational system which can be a model for the future.

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SUMMARY OF EDUCATION ADVISORY COMMITTEE REPORT

This report is to inform the Appalachian Regional Commission and members of the Appalachian community of Committee progress in its efforts to reach the following objectives determined by the Committee in April of this year.

1. Provide advice and guidance to the Commission regarding its current educational programs and develop criteria for improving the impact of current program investments on the educational systems of the Region.

2. Assist the member States in planning for education in the Appalachian portions thereof by:

    a. Identifying major educational problem areas,

    b. Assigning priorities among the problems identified,

    c. Assessing existing local, State and Federal resources available,

    d. Making recommendations for application, of such resources at the local and State level, to the Appalachian Regional Commission, for State Departments of Education, the Governors, and the State Legislatures, and

    e. Making recommendations to the Appalachian Regional Commission concerning areas of priority requiring new and continued Commission investment.

3. Provide relevant information on current educational developments in all areas and assist the States in implementing those that they select as applicable.

4. Formulate and foster cooperative educational programs that better utilize existing resources across county and State lines by aiding and encouraging cooperative efforts between local, State, and Federal agencies.

The Committee wishes to emphasize that its primary work has been directed toward identification of major problems and the setting of priorities. It feels, further, that it would be premature to make major recommendations at this time. This report, therefore, is to serve as a general background for all subsequent reports, to provide a current summary of work, and to indicate priority areas for future study.

In order to carry out these general plans, the staff of the Education Advisory Committee held a series of meetings with responsible authorities throughout the Region. As a result, the following priority areas were designated:

1. Improving the quality and quantity of the professional staff, particularly teachers,

2. Investigating formal programs for early childhood education, ages three to six.

3. Providing detailed information and plans for making occupational education available and relevant to the needs of the youth and industrial and/or economic development of the Region.

4. Providing detailed plans for the development of occupational information, curriculum, and guidance in the earlier years to increase the range of occupational knowledge and choice.

5. Suggesting cooperative utilization of physical, financial, and personnel resources across both county and State lines by educators at all levels, including those in colleges and universities.

6. Advising on the improvement of counselling services and curriculum.

7. Strengthening the schools' community service activities by cooperative planning with members of the community regarding needed educational facilities, equipment, and teachers' salaries.

8. Devising methods of evaluating the schools and their products; and

9. Studying ways to improve services to mentally retarded and physically handicapped children.

On the basis of the staff visits within the Region, the Committee recommended the establishment of Appalachian State and local educational planning groups. These *groups would establish an information and planning link at all levels of education*, and begin programs for gathering and disseminating information and develop problem-oriented recommendations in each area of concern. One specific area to be investigated is that of encouraging cooperation between industry and local schools in sharing computer time and other related services.

The Committee staff will be looking into the differences and similarities of rural and urban problems, and will focus its attention on the quality, and not quantity of programs recommended at the local level. The Committee and staff work will continue in all areas delineated above. It plans to issue its next →report in June of 1968, with a primary focus on occupational preparation, employment projections, investment trends, and recommendations in this major area.

The accompanying report represents a summary of Committee and staff work to date and is submitted for Commission approval.

Frank G. Rose

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INTRODUCTION

On November 10, 1966, the Appalachian Regional Commission (ARC) created an Education Advisory Committee (EAC) composed of twenty-five prominent educational and lay leaders of the Appalachian community serving under the Chairmanship of Dr. Vernon Alden, President of Ohio University.

The Committee consists of thirteen members appointed by each of the Governors and an equal number appointed by the Federal Cochairman. It has broad representation from all walks of education, as well as labor, industry, Federal, State, local Government, and professional organizations.

It is a working Committee whose members, even before serving for the Appalachian Regional Commission, were engaged in such activities as:

1. Planning and operating year-round Head Start programs
2. Working vigorously for higher teacher pay
3. Making significant contributions to national manpower policy
4. Planning and conducting a successful instructional television program
5. Conducting programs to reduce dropouts
6. Investigating the application of computer-assisted instruction
7. Converting railroad cars for use as mobile education and health centers

The Committee was charged with providing "on a continuing basis, advice and guidance to the Commission on matters pertaining to education which affect the economic and social development of the Appalachian Region."

Not only is the Committee responsible for developing comprehensive and innovative recommendations for the Commission on regional education problems, but also its members work closely with the Governors, their representatives, and the educational communities in each State, on a continuing basis, in formulating plans and programs of educational investment to meet the State and local needs.

The President's Appalachian Regional Commission, in 1964, stated that "economic growth in the modern world depends to a large degree on educational excellence." There are several ways in which this statement can be applied to Appalachia.

This report will inform the Appalachian Regional Commission and members of the Appalachian community of the Committee's progress toward reaching these objectives:

(1) Develop a good educational system which, when coupled with community interest, will provide an atmosphere conducive to the growth of diversified industry

(2) Offer the Appalachian youth the opportunity to receive quality education and thereby increase their lifetime earnings

(3) Create an informed and socially-responsible electorate which will be able to recognize community needs and work thru local and state governments to provide solutions

(4) Demonstrate the ability of the Appalachian people to utilize whatever capital and manpower becomes available

During its initial months, the Committee formulated a budget, a work plan, and acquired staff which had worked with the U.S. Office of Education to assure support and cooperation. The staff held meetings with appropriate authorities throughout the Region to determine educational problems.

The greatest single quantitative and qualitative deficiency lay in teaching and administrative personnel. Other major problems were the need for greater concentration of formal programs for the earlier years, facilities and equipment, counselling services, curriculum, pay scales, improved cooperative utilization of physical and personnel resources, and need for occupational education programs.

Appalachians and Education

Educationally, the major cities in Appalachia compare favorably with those of the rest of the Nation. Committee concern, therefore, has been mainly with the isolated rural areas characteristic of the Region. The rural problems result in part from the abandonment of coal mines, in part from isolation in the "hollows" and in part from marginal subsistence farming.

Although there is a wealth of literature studying the characteristics of the deprived youth of the urban ghetto, there is little about the rural non-farm youth in Appalachia. There are significant differences between the two.

The Region is 92.8 percent Caucasian and is in part composed of the descendants of the wave of Scotch-Irish migration in the early 1700's. Later immigration of other Europeans has resulted in an ethnically diverse population. They are fiercely independent, can be quite resourceful people, and have a strong identification with, and love for, their land. So much so that despite continued out-migration for jobs, young people return "home" on weekends, driving hundreds of miles.

The Appalachian people have a strong family unit, though frequently the wife is the breadwinner. They have a strong moral code and usually a fundamentalist religion; they are well mannered and courteous to the outsider. Appalachian youth in Job Corps camps most frequently drop out, apparently because of homesickness and inability to cope with the active aggressiveness of the urban youth. However, once convinced that they are trained to perform a task, they persevere and demonstrate considerable energy and integrity.

Due to the topography of the land, his independent nature and a strong family bond, the Appalachian is severely isolated. The social system he has devised has been slow to develop. Even the advent of television (sets owned by 67 percent of the families in the poorest counties) seems to have made little real change in his philosophy or his social environment. He is a great talker and a very patriotic American.

The differences between the family, culture, social setting, mores, etc. of the urban and the Appalachian youth are demonstrable and significant. The educational effects of these differences, however, have not been studied. We can only say that the character of the "deprived" Appalachian probably demands a different system and different approach to education. Several studies are being done in the Region under grants from various foundations which will be incorporated into Committee planning as they become available.

One thing is very apparent. The isolation from even knowledge of opportunity and the passive acceptance of the current state of affairs, coupled with limited resources, demands that the Appalachian youth receive a greater amount and variety of information than his city counterpart.

The loss rate averages 65 percent and in some areas of Appalachia as high as 71 percent between first and twelfth grade, compared with a comparable estimated national average of 36.2 percent. Some part of this may be due to a heavy but decreasing out-migration of the younger age group.

In two States, more than 25 percent of the population is functionally illiterate. The rate of failure for Appalachian youth on Selective Service educational tests is 30 percent, compared with a national failure rate of 22.8 percent.

Budgets in some school districts, where substantial consolidation has been achieved, must allocate over 50 percent of their total expenditures for transportation because of the low population density.

Factors of small district size,isolation, local politics, and out-migration of the young have additional effects. Many teachers are near retirement age. Teacher turnover is extremely high: 14.2 percent per year as compared to a national average of 8.2 percent. Young teachers are needed; but of those employed, 65 percent leave by the end of their first four years. As older teachers retire over the next few years, the overall demand will increase to 15 percent per year, exclusive of demands placed on systems by new programs.

Most Appalachian States export their teacher capital. Some States will subsidize a teacher's training up to $6,000 for four years and lose two-thirds or more to other States or outside of the Region. Pay differentials and lack of placement cooperation between school districts and institutions of higher education are in the main responsible for this.

Preliminary analysis of Federal expenditures in the Appalachian portions of the States within the Region indicates that they are receiving less than their pro-rata share of Federal funds. The difficulty seems to lie in the lack of knowledge of assistance and professional personnel who can prepare proposals for funding. In some cases, State allocation formulae penalize the Region for its low economic level and the sparcity of its population.

De-centralized Planning--Community Action Through Local Leadership

Members of the Education Advisory Committee have, without exception, gone well beyond their planning responsibilities to actively engage in the educational affairs of the Region. Many of the Governors' appointees have formed, managed, and chaired State Education Committees. Other members have worked to coordinate regional educational affairs in their respective Federal and private organizations. All of the Committee members have contributed to a long list of current operational accomplishments, such as:

1. Testifying before a Senate Committee on the need for a large scale planning and technical assistance investment in the Region. Current Senate amendments reflect these needs.

2. Recommending to the Commission methods of providing the necessary technical assistance at the state level to increase use of Federal funds.

3. Influencing a better allocation of State funds for higher education institutions in Appalachia.

4. Planning Cooperative Education Service Centers for multi-county areas.

5. Developing programs to jointly train teacher aides and other para-professional personnel with local teachers for the Appalachian Region.

6. Developing a reimbursement tuition plan between several States on a demonstration basis to encourage an increased number of disadvantaged Appalachian students to continue their education or training.

7. Establishing the only Regional Rural Adult Basic Education Demonstration Center in the United States.

8. Influencing funding by the Office of Economic Opportunity of 7 Follow Through demonstration programs (a continuation of the enriched program of Head Start into Grades 1 - 3 of the public schools) in Appalachian schools out of a total of 30 (23 percent) in the Nation.

9. Working with the U.S. Office of Education to develop guidelines for the Education Professions Development Act responsive to regional needs

10. Collecting information regarding model programs, both general teacher training and pre-school education, so that final recommendations will be made to the Commission program design, costs, facilities, and personnel needs.

11. Assisting in the selection of several Appalachian school districts for testing new curricula for occupational preparation.

12. Fostering interest, enthusiasm, and adoption of new methods, systems, and curricula in community colleges of the Region.

13. Providing technical assistance for project development and liaison with Federal agencies.

14. Establishing formal communication with most institutions and research groups similarly concerned throughout the Region and in the Federal establishment.

15. Preparation and a wide dissemination of a Preliminary Cost-Benefit Analysis of Pre-School Programs

The Committee, its staff, and the States have just scratched the surface of a new system for educational improvement. Results in the first eight months indicate the tremendous capabilities and potential of the cooperative effort in Appalachia may give direction to other parts of the Nation. As one Committee member stated after a State Education Committee meeting: "There's something wrong with us. . . We should have done this twenty years ago."

See Appendix D for detailed information on formation and operation of State Education Committees.

Long-Range Planning

These and many other useful improvements for education in the Region have not deterred the Committee from fulfillment of its primary mission in long-range planning. The planning activities carried on by the full Advisory Committee have mainly taken place within three sub-groups: Pre-School, Elementary and Secondary Education; Higher Education; and Occupational Preparation.

PRE-SCHOOL, ELEMENTARY AND SECONDARY EDUCATION

The focus of this Subcommittee has been on the development of programs for three, four and five year olds concentrating on five year olds--the kindergarten group.

There is an extremely high evidence of 1st grade failure in several of the States indicating inadequate preparation for school. Other research shows that a child who fails the 1st grade is an average of 5 1/2 years behind if he is "socially advanced" to the completion of high school. Research in learning theory shows further that one of the primary factors in the development of the ability to think is the effect of a variety of experiences in the background of each child. In the disadvantaged child, intellectual stimulation is either deficient or absent. Thus, the ability to react to new experiences, either physically or mentally, is lacking.

Only one state in the Region has a state-wide kindergarten program. Two states have kindergartens in 50 percent of their districts, and ten have kindergartens in very few of their systems. Simply the lack of such programs does not justify their establishment. However, the Committee has allocated the highest priority to pre-school programs as evidence from Head Start and other programs indicate the need to identify and help children, who, at an early age may have social, psychological or cognitive problems that would prevent or hinder normal progress in the regular school program.

A staff consultant also prepared a preliminary cost-benefit analysis for pre-school programs providing a number of additional priority justifications.

In order to encourage the establishment of such programs, the Subcommittee is developing a flexible plan to be used as a guideline by the Governors of the Appalachian States.

In inital discussions of this project, the Subcommittee decided the following should be included in a politically feasible and well-coordinated plan for early childhood education :

1. Presentation of statistical information on the proportion of the Appalachian States having publicly-supported pre-school programs in relation to the rest of the Nation.
2. Identification of Federal, state and local funding possibilities.
3. Recognition of, and provision for, the fact that different local and state problems will require different solutions.
4. Coordination of all Federal, state and local agencies that would be involved in the planning and implementation of such programs.
5. Integration of Head Start with the early childhood education program and the educational system.
6. Identification of some of the major obstacles in previous attempts to establish kindergartens and how these have been overcome or can be overcome.
7. Recommendations for short and long term training programs for childhood education teachers and aides.
8. Consideration of the possible use of "pilot" programs in the States as models.
9. Consultation by the Subcommittee and the Education Advisory Committee staff with experts in the field of early childhood education and in government agencies to determine what systems or programs have been developed.

As work on the development of guidelines progresses, a final list of components to be incorporated will be more carefully and completely defined.

Administrative Organization and Personnel

Massive and needed up-grading of curriculum and professional staff in Appalachia must be supported by concomitant changes in administrative practices. The isolation and relatively small size of administrative units in Appalachia makes long range planning and programs within each small district technically and logistically difficult.

One answer to this problem has been increasing consolidation. Up to about 8th grade, limited consolidation might be desirable (up to 100 total population). Greater consolidation at pre-school and elementary levels is not desirable. Not the least of the problems involved is the understandable reluctance of parents to let small children travel long distances to school.

At the high school level, the variety of offerings required for good occupational preparation or entry into college, may force greater consolidation and possibly the establishment of residential schools. In some cases, an alternative

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At the high school level, the variety of offerings required for good occupational preparation or entry into college, may force greater consolidation and possibly the establishment of residential schools. In some cases, an alternative might be heavy reliance on television, films, programmed materials, or other devices to bring courses to students in small high schools.

There are many places where consolidation is not feasible because of distance and travel time. The small student population in such schools makes specialized faculty and services prohibitively costly.

Hence, there is a great need for a system which will provide administrative and service personnel for such things as counselling, special education, and health comparable to those of larger, well-equipped suburban schools. The Education Advisory Committee staff is currently investigating the possibility of cooperative arrangements among school districts to form service centers covering multi-county units.

Information is being collected concerning costs, methods of organization and types of services to be provided so that program recommendations can be made. Services that could be provided by such centers include classes for mentally retarded or handicapped, guidance, psychological and physical diagnosis and referrals for treatment, in-service training and curriculum development for teachers, etc. The centers would also provide leadership in the development of new programs.

The Region currently has few qualified personnel and will not be able to afford all the professionals it should have. One source of help is the development of para-professional staff. Another is the faculty and education students at the many institutions of higher education in the Region. This suggests that service centers should be formally connected with institutions of higher education, where possible. This cannot be emphasized strongly enough. Not only do such institutions represent the only source of professional and administrative personnel, but also the benefits of such cooperation should greatly improve the under-graduate programs of these institutions themselves. Such cooperation might also improve the placement of professional personnel with the Region's schools.

Work is being done with universities and local school districts in several states on development of multi-county educational service centers. With participating service centers, children could receive all the services available in suburban schools without the de-personalizing effects of mass education. Service centers would avoid the major problem of consolidation by bringing services to the children rather than vice-versa.

The establishment of multi-district service centers will not reduce the educational costs of a smaller district. It will, however, permit this district to avail itself of a host of new and high-quality services at a fraction of their total cost. Initial costs of the centers could be financed through Title I and III of the Elementary and Secondary Education Act. Where Title III centers are already in existence, their programs could be altered to include some of the services required or desired by the local school districts. Additional service and costs, which cannot be borne by Title III funds, could be financed through the local cooperating districts. Each district would contribute on the basis of the proportion of services which they desire at an established per-pupil cost.

Where such centers include institutions of higher education, additional funding would be available through Titles I, III and VI of the Elementary and Secondary Education Act, 1965; relevant provisions of the Education Professions Development Act; and for some special facility needs, Higher Education Facilities Act.

Such centers should also receive State support. Studies are being done of enabling legislation and costs in several States where such systems exist in some form.

Professional Staff

Appalachia needs teachers--not only for pre-school, but also for elementary, secondary, and occupational preparation courses. Many teacher preparation institutions are not in a position to offer the content courses necessary for occupational preparation and pre-school programs, and additional help is needed for producing more and better qualified teachers at the elementary and secondary level. Remedial action must be taken to train, attract, and retain qualified teachers.

The re-allocation of duties for existing personnel and development of para-professional staff is also imperative because the lag between training and placement of necessary new personnel is between four and ten years. Again, the linkage between higher education institutions, as producers of professional and para-professional personnel, and local school systems, as consumers, is of paramount importance.

The staff is working with the U.S. Office of Education to require formal linkage between higher education institutions and school systems in the administration of the Education Professions Development Act, which will provide major funding for up-grading of existing personnel and education of new professional staff. It is attempting to get quantitative demands by type of staff needed to be reflected in the priorities assigned by the Education Professions Development Act for Appalachia.

Quality Measurement

In order to justify large scale investments in planning for education in Appalachia, some method of determining the most effective use of this money must be developed.

The most important measure of this effectiveness is the extent to which the products of the schools, i.e., students, meet the common requirements or goals of an adult in the American society. There are many examples in Appalachia of high school graduates who are unable to compete intellectually or occupationally with graduates from other parts of the Nation.

The need, then, is to evaluate this system and determine what degree, and in what areas the Appalachian student's achievement is lower. The evaluation must be diagnostic in nature to pin-point the specific deficiencies in the school systems.

Unless such a method of evaluation is developed, educational investments in many Appalachian schools will continue to be "piece-meal" or "hit-and-miss" approaches.

At the present time, the Education Advisory Committee staff is working with several states and foundations to develop a method by which school systems can evaluate their present status, in terms of student achievement. This will identify the highest areas of priority for effective investment.

Special Education

Over the past several years, Congress, as well as educators, has placed greater emphasis on the needs of the handicapped child. It is estimated that as many as 10 percent of the nation's children have some handicapping condition which requires special help. Although there is no estimate of the number of handicapped children in Appalachia, it is known that relatively few schools are able to provide the special programs which would enhance a child's educational and social prospects.

The Elementary and Secondary Education Act now provides Federal assistance for establishing regional resource centers for the handicapped. The Education Advisory Committee will be working with the Office of Education and institutions in the States to establish such centers for Appalachia's handicapped children. It is anticipated that such services would be part of new educational service centers centered around higher education institutions in the Region.

Facilities

In almost every school system in the Region, there are a number of needs for construction. Construction, like personnel needs, will be further increased by the demand for kindergartens or pre-school programs, technical media equipment for instruction, such as Computer-Assisted Instruction, and other programs. Several major problems exist in estimating the qualitative needs for additional classroom space.

1. Small school size, plus continued out-migration of young people in some areas make any investment in new or improved facilities, of a permanent nature, questionable.

2. As in most areas of public investment, there is no provision for amortization of building costs over a period of time and no depreciation of facilities and equipment. Few states keep up-to-date records concerning conditions of school facilities and few general standards of facility maintenance and minimum requirements exist other than the normal health and safety regulations. The only Federal source of information is a survey run in 1963 by the Office of Emergency Planning as part of a Civil Defense Shelter Survey.

3. Many apparent shortages of facilities may be due to poor class scheduling, although this will not be true in smaller schools.

4. Major changes in emphasis in curriculum and Federal and State support, such as in the area of occupational preparation, should increase the enrollment in specialized areas beyond present projections and necessitate new designs, arrangements and equipment.

5. Some Appalachian States do not nave school building programs, and Federal support in this area is limited to disaster and Federally-impacted areas.

6. There is no system by which population shifts due to new towns, new industries, or new programs can be interpreted into facility needs.

The major initial needs are for a common terminology and a standard and regular reporting system on facility needs. The Education Advisory Committee is working with the Appalachia Educational Laboratory, the U.S. Office of Education, and State Committees to develop such a system. Upon acquisition of information about needs for renovation and new facilities, the Committee will develop investment guidelines and model legislation for State and Federal support if needed.

Legal Problems

No discussion of facility or other financial needs would be complete without reference to State and local taxes. There is no question but that the tax bases of small rural districts are inadequate to provide educational improvements needed. A number of States are studying property valuation and assessment rates, as it is equally apparent that new tax systems will be necessary to raise additional revenue for support of all social services.

The Subcommittee will not be considering questions of tax structure and local finances until more information is collected and analyzed by responsible State agencies.

There are many other legal deterrents to educational improvement. One State requires 60 percent of the vote to pass bond issues. It also forbids counties from joining in capital construction. The Education Advisory Committee staff is devising methods to perform a comprehensive study of such legal impediments with assistance from State and local committees.

Additional Considerations

The Committee will also make recommendations concerning the extension of the school day and year, parent involvement, recreation services, provision for adult basic education services, participation of the schools in the overall economic development programs, and joint planning of community facilities to increase the school's role as a center of community activity.

Location of new community recreation, health, library, and other facilities around the schools will be encouraged so that there is a unification of school facilities and services with other community programs.

HIGHER EDUCATION

The higher education institutions in the Appalachian Region present a multiplicity of educational types and formats. Numerically, the twelve Appalachian States (excluding Mississippi) have approximately 774 institutions which offer some form of post-secondary training of academic, technical/vocational, basic or continuing adult education nature. The availability of these institutions to the general population of Appalachia is by no means equal. There are 144 counties in the 370 county Appalachian Region in which there is no post-secondary education. The problem of inaccessibility is compounded by increased tuition rates for non-state students, and many times within states, to non-county students.

Tuition Waiver

A tuition waiver program is being developed which will enable certain institutions to accept a student from out-of-state if his residence is closer to that institution than to one of his own state. The Higher Education Subcommittee places a special emphasis upon optimizing use of existing higher educational facilities, rather than creating new facilities.

With better cooperation and coordination among the higher education systems within the Region, it is suggested that a "Common Market in Education" could be designed, which as a source of skilled personnel, could initiate cooperative inter-county educational service centers. It could also provide technical assistance to local communities and small businesses when they are planning for economic development.

Two-Year Institutions

A preliminary investigation of the two-year educational patterns developing in the Region shows that several of the Appalachian States are advancing toward comprehensive community or junior college programs which are designed to reflect the education needs, not only of their community, but also of their area in relation to the Region and the State. These comprehensive colleges are offering a full range of curricula: transfer academic, terminal academic, transfer technical, terminal technical, basic adult and continuing adult.

The control of the two-year public institution within the State fails into three patterns:

1. Under the State college of university,
2. Under the State Board of Education, and
3. Under an independent State board.

The multiplicity of administrative patterns for state higher education institutions has created problems of duplication and inefficiency. It is not unusual in Appalachia to find two publicly-supported post-secondary institutions within a few miles of each other, sometimes just across town, both offering only academic courses or one academic and the other technical.

Often, institutions are forced to compete against each other for fulfillment of administrative and faculty needs. Consequently, neither institution receives adequate aid. The educational effectiveness and service value of a combined facility and administrative organization can be argued for persuasively.

States which are moving in the direction of providing comprehensive educational services at their two-year institutions are using the following approaches:

1. To incorporate a comprehensive curriculum program into their initial community or junior college development plan; and

2. To program integration of academic or technical components into existing two-year higher education institutions, as needed.

Other states are developing separate institutions - i.e., junior colleges for college transfer work and area vocational-technical schools for occupational training.

Teacher Survey

Beyond developing methods of cooperation and joint curriculum planning for higher education institutions, the Subcommittee's primary concern has been with development of professional staff for the school system. Due to a lack of definitive information about teacher attitude, background, salary, and certification requirements, the staff has designed a two-part Appalachian Teacher Survey.

The first part is almost completed and consists of objective information to produce the following:

1. A profile of the socio-economic-educational characteristics of the Appalachian teacher

2. The scope of teacher shortage and demand

3. The isolation of the problems of recruitment, placement, and retention

4. The effects of regional certification requirements on the recruitment and quality of teachers

The data are being evaluated with particular emphasis on the relevance of the curriculum and certification requirements to the pressing education manpower needs of the Appalachian Region. This information will be part of the second Committee report.

In the second part of the survey, a questionnaire will be given to teachers and administrators randomly selected throughout the Region. The questionnaire will be designed for computer analysis. The results of this survey should give the Committee and the States an indication of the strengths and weaknesses of teachers and teacher attitudes concerning the educational system at the elementary and secondary level.

The second section subjective questionnaire should provide data which will:

1. Suggest remedial procedures to improve the attraction-retention pattern. Currently, there is an extremely high loss rate of the younger teachers who are most needed in the Region.

2. Indicate the strengths and weaknesses of the educational qualifications of the system's personnel.

3. Provide definitive data on the socio-economic-educational status of the educational personnel in Appalachia.

The 1960 Census shows only 8 percent of the adults 25 years and over in Appalachia have a college degree; the quality of education in the elementary and secondary schools is below the national norm. These conditions produce high school graduates who could and should receive additional education, but cannot qualify for admission to a school which has high entrance requirements. The Committee intends to investigate the relevance of curriculum and type of institution in the Region to the education needs of the people.

Educational Television/Instructional Television

With the passage of the Public Broadcasting Act of 1967, the higher education institutions which have been involved in the production of ETV/ITV programs for use on educational television now have the opportunity for providing leadership in planning a regional inter-connection system.

The Subcommittee realizes what potential ETV can have when used in the small rural school by offering a wider variety of programs for both academic and vocational students. A series of conferences are being planned to explore inter-connection of State networks and the development of Regional planning centers.

OCCUPATIONAL PREPARATION

Introduction

This area of education is most directly relevant to economic development and has been given highest priority of all by both the Appalachian Regional Commission and the Education Advisory Committee. The next report of the Advisory Committee to be released by the end of June 1968 will be primarily concerned with recommendations in this important and relevant area of educational service.

Occupational Preparation is more than vocational education in the high schools. While the public schools are a very strong source of supply for trained manpower, there are other valuable training resources available within industry training programs, within such commercial facilities as private schools, within governmental programs for training their own employees, and, of course, in the very large numbers of Federal programs seeking to provide some type of vocational educational experiences. All these efforts compose the occupational preparation spectrum for Appalachia that is the major concern of this Subcommittee, a concern that seeks to harmonize these several efforts into a training system that will offer every individual within the Region an opportunity to learn the skills that will provide him with a personally satisfying and financially rewarding work experience.

The students with whom we are concerned are the dropout, the high school graduate who is not continuing to college and the college student who stops short of a degree. The adult population with whom the committee is concerned falls essentially in the first category. There are many Federal programs which are attempting to remediate the problems of the dropout, but efforts to close gaps in the system which produces these dropouts or unskilled graduates are not as visible. Because of a concern for continuing economic development of the Region and thus institutional change, the Subcommittee on Occupational Preparation has been working on needed changes in the system of public education. Although changes in occupational preparation will demand concomitant changes in all other parts of the educational system from early childhood through graduate education, this section deals with occupational preparation as a separate area concentrating on Grades 7-12 and the first two years of post-secondary education as they relate to technical training.

The purposes of this section of the report are:

1. To localize some initial finding about the condition of occupational preparation (vocational and technical education) within the Appalachian Region through use of limited regional data and national trends;

2. Describe work plans to provide more extensive information and recommendations concerning all occupational preparation needs, investments, and current programs within the Region;

3. To provide in this Report, through the Appendices, background information on historical problems, definitions and tentative models for projecting needs in Vocational Education.

The discussion which follows will develop problems of gathering information, quantitative needs for programs and investments, qualitative changes needed, discuss the problems of attrition rates (dropouts) and make initial recommendations both for further work and current changes.

Background

The bulk of the analysis which follows will be based on a mixture of information currently available on the Appalachian Region and on relevant national trends. The sustained economic growth the Nation has experienced since World War II has created unprecedented manpower demands in terms of both quality and quantity--especially since 1961. These demands for manpower have two sources: (1) the expansion of our Armed Forces, and (2) new requirements for non-farm employment. The supply has come from three sources: (1) new entrants into the labor force; (2) decreases in the level of unemployment; and (3) declines in farm employment.[1]

The level of skill and knowledge required in both industry and the military has increased to such a degree that the economics of their operations no longer allow them to perform the former functions of being two of the nations largest "school-systems". They cannot afford to take and train youth because the costs of training are too high, and the mistakes that can be made would be too costly. Both these "school systems" have responded by continuing to raise the experiential and educational job entry requirements. While there are those who contend that many jobs can be filled with persons with lower skills and, that both industry and the military should reorganize their job structures to permit greater use of such semi-skilled personnel, such reorganization would take many years to effect. Even the military's Project 100,000 is almost a token effort in what the U.S. Department of Labor reports as the highest period of youth unemployment in the Nation's history.

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[1] Manpower Report of the President, 1966. p. 14.

Table I on the following page, reflects the Nation's overwhelming dependence on our public schools as sources of trained manpower. The present vocational education system cannot meet these demands for trained personnel.

While there is a need to increase the number of people trained by the public schools in vocational education programs, this will not be enough. There is also a need for a re-orientation of many tradional programs to reflect the changing needs of our growing industrial society. For example, one of the most impressive changes in the occupational structure of the nation is the decline of agriculture as a major source of employment. The magnitude of this change is shown in Table II. In terms of numbers, we have seen a decline in farm employment of 140,000 per year for the 1961-1966 period, which is projected to continue approximately at the same rate each year until 1975.

Changes in quantity and types of training are not the only forces influencing occupational preparation. There are also shifts in quality that reflect themselves in the higher educational attainments of the labor force. These shifts have many implications for occupational preparation, especially vocational education at the secondary and post-secondary levels. This shift can be seen in Table III. A larger relative share of the labor force in the future will have an opportunity to acquire occupational preparation in high school, and larger absolute numbers will need some form of occupational training. While more students will be going to college, still more will face the world of work with a ninth to twelfth grade education. Somehow these needs must be met, and met with relevant training experiences. To cite employment in agriculture as an example, the agricultural population reflects low educational requirements and attainments which adversely affect their wages, their contributions to local tax efforts, their adaptability to new jobs and even the educational objectives and attainments of their children. In terms of the need in Appalachia for ubiquitous high wage industry, the type of profile that is produced by low-relevancy training programs in not that which attracts such industry.

With a higher demand for better trained manpower on one side and an increase in the number of students finishing high school on the other, occupational preparation in the Region must not only shift its emphasis to non-farm programs, but must continue to increase the

TABLE I

Overall Changes in Supply and Demand for Manpower
1961 - 1964, and 1964 - 1966

INCREASES IN MANPOWER REQUIREMENTS IN				WERE MET FROM THESE SOURCES			
Time Period	Armed Forces	Non-Farm Employment	Total Demand	New Labor Force Entrants	Decrease in Unemployment	Decline in Farm Emplmt.	Total Supply.
1961-64	150,000	1,350,000	1,500,000	950,000	300,000	250,000	1,150,00
1964-65	0	1,900,000	1,900,000	1,150,000	525,000	225,000	1,900,00
1965-66	400,000	2,250,000	2,650,000	1,150,000	450,000	350,000	2,650,00

SOURCE: Manpower Report of the President - 1966. Calculated from p. 14.

TABLE II

PERCENT OF EMPLOYED PEOPLE 14 YEARS AND OVER IN AGRICULTURE, 1947-1966

Year	Percent
1947	14.2
1948	13.4
1949	13.7
1950	12.5
1951	11.6
1952	11.1
1953	10.5
1954	10.6
1955	10.6
1956	10.1
1957	9.6
1958	9.1
1959	8.9
1960	8.6
1961	8.2
1962	7.6
1963	7.2
1964	6.8
1965	6.4
1966	5.7

SOURCE: Manpower Report of the President - 1966., p.-213

TABLE III

YEARS OF SCHOOL COMPLETED
CIVILIAN LABOR FORCE
18 YEARS AND OVER
1952 - 1966

Year	Up to Eight Years	High School	One or More Years of College	Median School Year Completed Agricultural Workers	Median School Year Completed, Civilian Labor Force
1952	37.5	45.1	16.2	8.3	10.9
1953					
1954					
1955					
1956					
1957	32.9	48.2	17.5	8.5	11.6
1958					
1959	30.0	49.8	18.7	8.6	12.0
1960					
1961					
1962	27.0	51.4	21.7	8.7	12.1
1963					
1964	22.5	54.5	23.0	8.7	12.2
1965	21.6	55.2	23.2	-	-
1966	20.1	56.0	23.7	8.8	12.3

Source: Manpower Report of the President, pp. 237, 275.

number of program choices. With an increase in the number of new skills and new occupational demands, a larger volume of students and the development of new technical categories of employment, the continuing investment in vocational and technical education should be primarily in expanding, new curriculum areas and new offerings.

Current investment in secondary vocational education, particularly in Appalachia, seems to be following more traditional patterns and adjusting very slowly to the changes occuring in the world around it. Slowness of adjustment is true not only of Appalachia, but nationally, as can be seen from the educational attainment of the trainees in Manpower Development and Training Act (MDTA) programs. One of the prime targets for such programs is unemployed youth; yet in the four years of the program through 1966, 43.2 percent of all its trainees enrolled in institutional projects were high school graduates. In calendar 1966, 47.4 percent of MDTA enrollees were between 19 and 21 years of age. And of these, 63.3 percent of enrollees were between 19 and 21 years of age. And of these, 63.3 percent of enrollees in on-the-job training projects were high school graduates! The number of high school graduates among the "hard core" unemployed aimed at in the MDTA brings the relevance of the high school program into serious question. The deficiencies, visible at the national level, would seem to be greater within Appalachia.

However, the data on vocational education within Appalachia are hard to come by, and until they are available, our chief reliance must be on the inferences that can be drawn from the examination of national trends.

Occupational Education Information

The need for relevant information on all aspects of vocational and technical education seems to be a rather humdrum and technical subject. As in other areas of education, there are great masses of information concerning occupational preparation. Upon examination, however, it appears that little information, defining the relative size of problems or actual needs relevant to investment decisions, exists. If it does exist, it is usually not in a relevant form, susceptible of easy interpretation.

For example, there is currently no reporting system which will tell us if, when a child leaves a school, he is enrolling in school elsewhere, dropping out, being employed or any other of the many alternatives there are. Therefore, it is very difficult to tell what the actual "drop out" rate is. Neither is there a system by which occupational courses being given can be related to job titles or to the skill requirements of specific jobs. Very little information of any kind in this field is reported at county or school district level. Even when data are collected on a regular basis, comparison of such data on an interstate basis is difficult because, data which are similar in kind are collected in different years by the several states, or because the level of abstraction required and the methods used for collection of such data differ so greatly that coadunation is impossible.

These problems are further compounded by a change in the already inadequate reporting system, for vocational and technical education. Formerly this data as collected in seven rather difinitive categories (Home Economics, Trades and Industries, etc.). Presently such data are being collected by level of endeavor, (such as: secondary, post-secondary, etc.), regardless of the type of course being taken, so that it is almost impossible to determine what types of curricula and training are offered, or are beneficial.

Until such time as the Federal, State and local reporting systems extend common reporting systems down to the county and school district level any national planning will be considerably hampered. The bulk of the report that follows combines information which was collected with the cooperation of Appalachian State Education Departments and extrapolations from national data derived from various sources.

Recommendations

The Sub-Committee has specified the types of information which it requires and feels can be collected. A lay reader is unaware of the data requirements listed below because most of this information does not exist in compilation but must be synthesized from many sources:

a. Specific kinds of occupational courses, regardless of how they may be identified within a vocational category;

b. The dollar value of investment and operating costs each State makes in vocational education;

c. Plans the several states have for vocational education investment within the Appalachian portions of the States;

d. The present and projected pattern of employment within Appalachia by industry to provide information for curriculum planning;

e. The dropout rate by county, by school system, by sex, by curriculum area and by race;

f. The number of vocational teachers and their qualifications;

g. How many State Employment Counselors are assigned to You Activities within the Region and how are they used;

h. The investment of education funds in vocational guidance and counseling in Appalachia;

i. The relevance of present home economics programs for low income groups

j. The needs for, and status of, training programs for paraprofessions in education and health

k. An assessment of the need for vocational education to include the following information:

    1) Number who start first grade
    2) Percent graduating from high school
    3) Percent graduating and going to college
    4) Percent completing college
    5) Percent of youth enrolled in post-high school and vocational and technical education
    6) Enrollments in MDTA
    7) Enrollments in Job Corps
    8) What facilities exist where?
    9) What is the quality of these facilities?
    10) What are the plans for construction?

l. What promising programs exist in and outside of Appalachia that may be useful?

m. What services and funds are required to implement a first-rate program in occupational preparation in Appalachia?

In addition to these basic information requirements the staff will be working with other Governmental agencies to prepare special studies in areas of interest outlined hereafter in the recommendations of the various sub-sections.

Enrollment

While the information needs are immense it is possible to reach some conclusions from the information available. Enrollments in vocational education in Appalachia in the next 2 years are estimated to be as follows:

TABLE IV

Type of Enrollment	1967	1968	1969
Secondary	300,000	318,000	334,000
Post-Secondary	48,000	58,000	82,000
Adult	325,000	380,000	400,000
Special Needs	10,000	15,000	25,000

Potential Enrollment in 1975 by Percent (%) of total Secondary* Enrollment (1,965,000) participating in Occupation Preparation

PERCENT	ENROLLMENT
20%	395,000
25%	491,000
30%	589,000

Before we go into relative growth of the various levels of education it is significant to note the relative number of Appalachian students enrolled in vocational and technical programs at the secondary level compared to those in the U.S. Partial data from the Region indicates that although some 27% of all secondary students in the Nation are enrolled in occupational preparation courses, (see Tables V and VI), only 20.1% of the Appalachian students are receiving similar training. Even in a State which is as highly industrialized as is Ohio, it is estimated that over 80% of the available jobs require some type of vocational or technical training. The low percentage of vocational-technical students in Appalachia can be attributed to a variety of factors, ranging from limitations in the type of offerings, to the low status of these course offerings have in an academically oriented curriculum. The short term projections above will be considerably changed if a greater percentage of the student population at the secondary level is encouraged to receive occupationally oriented education. For example, Table IV shows that if the present mix continued, and the secondary student population in Appalachia increased at the same rate as in the U.S. there would be an estimated 395,000 vocational-technical students in Appalachia by 1975. If the mix changed in the Region to 25% of enrollment, the figure would be 491,000, and if it changed to 30% of the total which would probably still be below the national percent, it would be 589,000! If the loss rate were altered to any significant extent the total enrollment

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* Present enrollment times the national growth rate.

TABLE V

ACTUAL AND PROJECTED ENROLLMENTS AND PERCENTAGES BY PURPOSE VOCATIONAL AND TECHNICAL EDUCATION (UNITED STATES)

	FISCAL YEAR											
	Actual 1964		Actual 1965		Provisional 1966		Projected 1967		Projected 1970		Projected 1975	
	Enrollment	%	Enrollment	%	Enrollment	%	Enrollment	%	Enrollment	%	Enrollment	%
Secondary	2,140,756	46.9	2,819,250	51.9	3,061,541	50.1	3,500,000	50.9	4,525,000	47.1	5,500,000	30.3
Post-Secondary	170,835.	3.7	207,201	3.8	438,469	7.2	525,000	7.6	650,000	6.8	1,250,000	8.9
Adult	2,254,799	49.4	2,378,522	43.8	2,546,452	41.7	2,700,000	39.2	4,050,000	42.2	6,500,000	46.4
Special Needs	---	---	25,638	0.5	59,376	1.0	155,000	2.3	375,000	3.9	750,000	5.4
TOTALS	4,566,390	100.0	5,430,611	100.0	6,105,838	100.0	6,880,000	100.0	9,600,000	100.0	14,000,000	100.0

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education, March 15, 1967.

TABLE VI

VOCATIONAL ENROLLMENTS IN SECONDARY SCHOOLS, 1965-1966, AND PROJECTED VOCATIONAL ENROLLMENTS ASSUMING VARYING PERCENTAGES OF GROWTH THROUGH 1975

(UNITED STATES)

(Expressed in thousands)

School Year	Secondary[1/] Enrollments	Enrollments[2/]	30% Second. Enrollment in Vocational-Technical Education	35% Second. Enrollment in Vocational-Technical Education	40% Second. Enrollment in Vocational-Technical Education	50% Second. Enrollment in Vocational-Technical Education
1965	11,618	2,819,250 (24.3%)	---	---	---	---
1966	12,000	3,061,541 (25.5%	---	---	---	---
1967	12,300	---	3,690	4,305	4,920	6,150
1968	12,800	---	3,840	4,480	5,120	6,400
1969	13,200	---	3,960	4,620	5,280	6,600
1970	13,500	---	4,050	4,725	5,400	6,750
1975	15,000	---	4,500	5,250	6,000	7,500

1/ From Table I, Fall enrollment in educational institutions, Projections of Educational Statistics, OE-10030-66. U. S. Office of Education.

2/ Enrollment data for 1965 are actual; 1966 data are provisional

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education, March 15, 1967.

would rise and the percentages applied would in turn yield an even larger figure. Simply, the point is that to meet national norms, the Region will require significantly greater efforts to provide its students with occupational education, than will the rest of the nation.

In terms of relative growth by level of education, regional trends show that post-secondary enrollments are increasing more rapidly than those at the secondary level. In fact, in many States there is a shift away from offering vocational courses at the secondary level with a parallel increase of courses for post-secondary students.

As can be seen on Table V and VI, national enrollments parallel this trend. By 1975, there is projected a 57% increase in secondary enrollments as opposed to 138% in post-secondary, 141% in adult programs, and 410% increase in special needs program enrollment. If such percentages were applied to the Region in a raw form, they would suggest the primary investments that will have to be made in areas other than secondary education.

However, there are a number of mediating factors. First, the change in the percentage of secondary enrollments in vocational and technical education, and the decrease in loss rates will tremendously increase the demand at the secondary level, making it as great, or greater, than that at all the other levels. The decrease in national enrollments at the adult level between 1964 and 1966 and increase in post secondary enrollments suggests that more and more young people are taking their occupational training immediately after high school rather than waiting until later in life. If this trend continues, the uses for adult programs will become more and more restricted to re-training needs...a task for which industry is becoming more and more responsible. The fact that the enrollment in Manpower Development and Training Act programs is changing toward older enrollees lends credence to this assumption. Therefore, national projections for adult program enrollees appear to be considerably inflated and may not be applicable to Appalachia. There is one caveat, if out-migration of the higher skilled Appalachian youth continues, there may be a relatively high need for adult programs for those that have and will remain in the area.

The projected need for increase in post-Secondary programs is also somewhat questionable. Evidence indicates that the establishment of a junior or community college in an area will increase post-secondary enrollments by an average of 100%. Such institutions are being established nationally at the rate of one a day. The continuing high investment both regionally and nationally has contributed to this increased enrollment. Lack of finances will eventually curb the present trend. When investments begin to level off, whether because of politics, lack of funds or saturation, the rate of increase of unfilled demand for post-secondary training should decrease, despite continuing industrial demand for high skills.

There is no question that there will be a sharp rise of demand for occupational preparation at all levels over the next eight years. The number of students desiring such occupational training at all levels could easily double by 1975. Even if a firm commitment were made now to meet all needs fully, planning, facility construction, and faculty recruitment and training would create time lags which would seriously erode the capabilities of even the most efficiently administered program.

In a Region as short of resources as Appalachia, priorities have to be chosen. Almost 50% of current enrollment in vocational and technical education is at the secondary level. Changes in loss rates and an increasing percentage of enrollees in the secondary schools, further emphasize the sub-Committee recommendation that this must be the area of greatest concentration over the next few years. The factors of loss-rates and types of occupational offering are particularly important.

Loss Rates

The number of new entrants into the labor force is now over 1,000,000 annually and is likely to rise on the national level.

For every 10 pupils in Grade 1,
6 graduate from high school
2+ go to college
1+ finishes.

In Appalachia, if impressions from the Annual Reports of the State Departments of Education can be summarized,

For every 10 pupils in Grade 1,
4- graduate from high school
1+ go to college
less than 1 finishes.

Essentially, 65% of those Appalachians who enter the first grade do not complete High School as compared to a National figure of 40%. Even with a precise knowledge of out-migration patterns the figure is substantially higher than in the rest of the nation. These attrition rates are disturbing, and reflect a tremendous loss of human potential. While the percent of people in the labor force is rising, there remains a large absolute number who do not graduate, leaving an ever growing burden on society to train them in some way.

The bulk of the dropouts occur in the 7th to 9th grades before vocational courses are offered at the secondary level. There is some evidence that vocational graduates are better prepared for entrance into the labor force than non-vocational graduates.

When one begins to look for causes for such a high rate, only a few significant indicators appear. There is evidence to indicate that the presence of vocational programs in any number seems to bear little relationship to the incidence of school dropouts. The suggestions herein relate more to the quality of the offerings and the fact that dropouts occur in the main before such offerings become available.

There is an extremely high correlation of dropouts to first grade failure and subsequent grade retardation. It seems to the subcommittee that a dual problem is revealed. Attack on this problem must include a strenthening of early-childhood programs aimed at improving the basic vocational skills or reading, mathematics and communications.

A detrimental relevant factor seems to be a pupil-counsellor ratio of 1-1,300 students in the Region. When one looks for Elementary or Junior High School (7-9th Grades) counsellors, the ratio becomes even more appalling. Given that 1) the demand for counsellors exceeds the national supply; 2) that the Region has little direct dollar support for such ancillary personnel, and has wage rates that are non-competitive; 3) that most counsellor training is not occupationally but college oriented; and, 4) that the counsellor is one or more steps removed from frequent contact with the child: the Committee recommends that more direct and immediate planning be undertaken.

Recommendations

It recommends the development of occupational information curricula, for use at the 7th to 9th grade level or below, by the regular instructional staff. The intent of such a curriculum would not be to force a student to make an occupational choice at this age (something he is already forced to do at 15 or 16 without information), but to provide him with information to use, with the assistance of intelligent counselling, to make relevant academic decisions and formulate vocational aspiration in an intelligent fashion.

Lacking the knowledge of choices open to him, the student questions the relevance of academic programs and often drops out of school before he can take advantage of vocational offerings.

To create such a curriculum, projections must be developed for areas of potential high-wage, high skill employment which have opportunities for advancement. These projections would group occupations in clusters and translate entry requirements into academic and skill requirements.

It is envisioned that the curriculum developed would employ one or more regional centers each of which would be concerned with four or five occupational clusters. These centers would work closely with school districts and major employers in skill areas, to develop necessary academic and training prerequisites. During the development process there would be heavy involvement of local schools and instructional staff. A major focus of the curriculum would be the generation of actual work problems to demonstrate the link between academic skills and job performance requirements. Industry could provide information, technical personnel, and even financial assistance since this would ensure a reduction in the cost of recruitment and training, after employment. Schools would develop the actual curriculum, testing and revising it until student, administrator and teacher materials were fully proven.

Upon completion of the development process, the center would help install training materials in institutions of higher education, so that the secondary school vocational-technical program would become part of the institutions regular teacher preparation curriculum. The centers could then devote their energy to up-dating the curriculum and developing new curricula to actually impart the vocational and technical skills required.

The development of a program through this process would:

1. Provide up-to-date information on occupational areas to youth before they drop out and increase their knowledge of occupational possibilities;

2. Provide detailed information to teachers concerning vocational opportunities so that their counselling function is strengthened;

3. Make information about employment a part of the regular school course offerings;

4. Provide a link between academic courses, work knowledge and skill requirements.

The magnitude of the effort required suggests that Federal funding will be necessary since the curriculum would be of use throughout the Nation. Modern mathematics and physics curricula have incurred developmental costs of $8-12,000,000 and an investment of a similar magnitude would be needed here. The staff has already made preliminary efforts to seek sources of this funding and will be developing a design over the next six month period.

Consideration has been given thus far to the quantitative aspects of the vocational education problem, emphasizing the needed shift toward secondary education to combat the dropout problem.

The need for new programs in colleges which train vocational teachers and for curriculum development in regional education centers is also of primary importance.

The remainder of the report will consider the problems of quality assessment and relevance of present course offerings; the size of personnel and facility needs in anticipation of growth and obvious monetary requirements for initiation of these plans.

Current Program Offerings-The Question of Relevance

Merely examining the absolute demands of enrollment adjusted to consider such factors as loss rates is not enough. Tables VII and VIII on the following pages show the distribution of program offerings by major category within the Appalachian Region at all levels.

Definitions of the types of training offered in these broad curriculum categories will be found in Appendix B. Before looking at comparisons to the national figures, there are certain inferences that can be drawn. 41% of all programs and 52% of secondary programs are in the traditional vocational agriculture and home economics categories. Looking back at Table II, we see that in the last twenty years agricultural employees have declined from 15% of the work force to less than 6% of the work force. In Appalachia the decline has been even more rapid and by 1975 agricultural employment will be an almost negligible percentage of the work force. Although these figures do not make allowances for agriculturally related occupations, such as farm implement mechanic, salesman, or

TABLE VII

Number of Vocational Education Programs By Purpose and Occupational Category, Fiscal 1967-68---APPALACHIA

Occupational Category	Purposes									
	Secondary	(%)	Post-Secondary	(%)	Adult	(%)	Special Needs	(%)	Total	(%)
Agriculture	1160	21.4	22	6.7	1083	17.6	17	15.6	2282	19.0
Distribution	306	5.6	11	3.4	251	4.1	7	6.5	575	4.8
Health Occupations	15	.3	47	14.4	225	3.7	--	--	287	2.4
Home Economics	1656	30.6	1	.3	1035	16.9	42	38.5	2734	22.8
Office Education	1301	24.0	51	15.6	507	8.5	2	1.8	1861	15.5
Technical Education	69	1.3	96	29.5	210	3.4	--	--	375	3.1
Trades and Industry	913	16.8	98	30.1	2826(a)	46.0	41	37.6	3878	32.3
TOTAL	5420	100%	326	100%	6137	100%	109	100%	11992	100%

(a) 2295 are in North Carolina, Alabama, and Tennessee Appalachia
Source: State Plans

TABLE VIII

Number of Counties with Vocational Education Programs In Appalachia - Fiscal Year 1967-68

(By Purpose and Occupational Category--Total Counties -- 397)

Occupational Category	Secondary	(%)	Post-Secondary	(%)	Adult	(%)	Special Needs	(%)
Agriculture	365	92.0	14	4.0	306	77.0	14	4.0
Distribution	170	43.0	8	2.0	94	24.0	4	1.0
Health Occupations	11	3.0	34	9.0	88	22.0	--	--
Home Economics	382	96.0	1	.3	234	79.0	29	7.0
Office Education	221	56.0	34	9.0	102	26.0	2	5.0
Technical Education	48	12.0	36	9.0	43	11.0	--	--
Trades and Industry	217	55.0	39	10.0	216	54.0	30	8.0

even ornamental horticulture which is primarily an urban demand, these peripheral occupations do not significantly increase the labor demand, and the skills necessary in many of them are closely related to skills in other major training categories. Further, a preliminary analysis of programs under the category of Agriculture in the Region indicate that few of these programs train in these more sophisticated categories.

Vocational agriculture is a predominately male-oriented program and tends to neglect the growing participation of women in the labor force.

The Home Economics programs focus mainly on "home and family life" primarily in the rural setting with little relevance to occupational training. Although skills that could be taught in such programs could easily relate to such occupations as child-care specialist, teacher aide, health care specialist, etc., for which there is a much higher demand, most programs provide little training relevant to these occupational areas.

When we look at the distribution of both these program areas by county we find that 92% of Appalachian counties offer vocational agriculture programs, and 96% offer Home Economics. Such emphases are somewhat lower at the post-secondary, adult and special needs levels, however, they remain essentially the same.

In adult programs, considerably increased enrollments are expected by 1975 the trend in the Region is to endeavor to capture these enrollments not in office occupations, trades and industry or health occupations where there are higher employment demands, but in traditional agriculture and home economics programs.

Only 20% of Appalachian counties offer programs for people with special needs. Some States have no programs for such people in any occupational category. Where programs do exist, 54% of the counties provide mainly courses in agriculture and home economics, which is almost negative assistance.

Recommendations

The conclusion is inescapable: the massive investment needed in occupational preparation in Appalachia cannot simply be more of the same. The bulk of current offerings are either in areas which are not occupationally relevant, or train for declining occupations. It is apparent from Table III that educational levels in agriculture are much below the national average, about eighth grade which is considered just above the level of functional illiteracy. This implies that their skill level is extremely low. Correlation between educational attainment and income, plus information on that income shows that training is not only for a set of skills for which there is a low demand but also low wages. Further, low educational attainment indicates less ability to be retrained.

Table IX shows comparative placement in related occupations by various major categories of vocational training. No placement information is available for Home Economics. This is not surprising, since less than 1% of these programs train for gainful employment and an analysis of skills taught, compared with the Dictionary of Occupational Titles indicates that the training only relates to employment as a household worker, a low wage occupation.

In Vocational Agriculture, 74% of the graduates join the military, an unrelated occupation. This indicates an extremely high expenditure for training in areas of declining, low skill, and low wage employment. This problem will be considered further below.

The loss rate in Appalachia is estimated to be 65% of those who enter the first grade. Of the vocational programs that help those who drop out, Trades and Industry ranks highest, yet only 217 of 394 counties offer this program. At the Adult Education level, almost half of the available programs are in Trade and Industry. Unfortunately these programs are concentrated in three states. In order to see what other discrepancies exist, consideration should be given to Table X.

Although enrollment data by category has not been completed, some comparisons can be made between Appalachian figures on the number of programs by type (an available figure) and National enrollment by category. See Table X. There are several difficulties in such a comparison. The number of programs does not necessarily relate to the number enrolled. However, the number and percent of programs will indicate geographic spread, and can be used as a gross comparison to national enrollment. One additional problem is that national figures reflect large urban enrollments where courses in agriculture for example, are not prevalent. The Appalachian problem is more severe and the crisis which exists in supply of trained manpower is also greater.

Total enrollment in all Vocational Education programs has diminished from 19% to 15%, in the last three years. In the region Agriculture programs comprise 19% of all vocational programs. This disparity is greatest at the secondary level where in the same three years, National enrollment has decreased from 23.4% to 17%; yet in the region 21.4% of these programs are still in agriculture. In post-secondary and adult programs, agriculture is six times more prevalent in Appalachia than in the nation. Despite the fact that there will be a relative and absolute decline in agriculture employment by 1975, the enrollment is projected to rise.

Table IX

Relative Placement of Vocational Education Graduates 1964-1965 by Vocational Category for U.S.(a)

Placement	Agriculture	Distribution	Technical	Trade & Industry	Business Education	Home Economics (b)
	Vocational Category by Percent					
Placed in Related Occupations	15	70	38	72	67	
In Armed Forces	74	12	23	12	2	
Went on to Higher Education	9	6	25	5	8	
Placed in Unrelated Occupations	1	7	12	6	7	
Unemployed	1	1	--	1	--	
Unaccounted For	--	4	2	4	16	

(a) Placement percentages can be assumed to be even lower in Appalachia.

(b) Data not available. "Guidance Placements and followup for the home economics students were not satisfactory." (p.5-6)

Source: Role of the Secondary Schools in the Preparation of Youth for Employment.

Calculated from Tables 5.1, 5.2, 5.3, 5.5, and 5.8.

TABLE X

ENROLLMENTS IN VOCATIONAL-TECHNICAL EDUCATION COMPARISON OF 1964, 1965, and 1966 DATA INCLUDING PERCENT OF TOTAL ENROLLMENT - U.S.

PROGRAMS AND PURPOSES	Actual 1964	(%)	Actual 1965	(%)	Provisional 1966	(%)
Totals	4,566,390		5,430,611		6,105,838	
Agriculture	860,605	19	887,529	16	907,356	15
Secondary	501,819	23.4	516,893	18	510,354	17
Post-Secon.	---		2,054	1	5,914	1
Adult	358,786	16	367,287	15	390,388	15
Spec. Needs	---			5	700	1
Distributive	334,126	7	333,342	6	420,396	7
Secondary	55,132	2	76,186	3	101,584	3
Post-Secon.	2,688	2	6,384	3	15,947	4
Adult	276,306	12	250,222	11	300,528	12
Spec. Needs	---		550	2	2,337	4
Health	59,006	1	66,772	1	83,552	1
Secondary	5,478	.2	8,744	.3	9,730	.3
Post-Second.	41,038	24	21,303	10	34,029	8
Adult	12,490		36,517	2	39,478	2
Spec. Needs	---		208	1	315	.5
Home Ec.	2,022,138	44	2,098,520	39	1,925,066	32
Second.	1,308,453	61	1,442,807	51	1,291,246	42
Post-Second.	1,652	1	2,060	1	2,188	.5
Adult	712,033	32	650,211	27	607,280	24
Spec. Needs	---		3,442	10	24,352	41
Office	---		730,904	13	1,237,086	20
Secondary	---		498,034	18	798,433	26
Post-Second.	---		43,633	21	165,486	38
Adult	---		187,468	8	270,081	11
Spec. Needs	---		1,769	7	3,086	5
Technical	221,241	5	225,737	4	254,091	4
Secondary	20,755	1	23,877	1	28,865	1
Post-Second.	71,824	42	71,845	35	100,209	23
Adult	128,662		130,015	6	124,947	5
Special Needs	---		---		70	.1
Trades and Industry	1,069,274	23	1,087,807	20	1,278,291	21
Secondary	249,119	12	252,709	9	321,329	11
Post-Second.	53,633	31	59,922	29	114,696	26
Adult	766,522		756,802	32	813,750	32
Spec. Needs	---		18,374	72	28,516	48
TOTALS	4,566,390		5,430,611		6,105,838	
Secondary	2,140,756	47	2,819,250	51	3,061,541	51
Post-Second.	170,835	4	207,201	4	438,469	7
Adult	2,254,799	49	2,378,522	44	2,546,452	41
Spec. Needs	---		25,638	.5	59,376	11

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U.S. Office of Education, March 15, 1967.

2) Distributive Education: This program includes training programs in sales skills, which are greatly needed nationwide. Table X shows a rise in national enrollment. While the percent of such programs in Appalachia is less than the percent of national enrollment, secondary and adult programs seem to exceed national figures for the same class.

3) Health Occupations: Programs in the region exceed the percentage of such programs in the U.S. Considering the tremendous shortage of health service and health manpower in the area these programs need to be expanded to account for anticipated need.

4) Home Economics: This program shows a lower percentage of programs than percent of the national enrollment in every area but at the secondary level. Here the Region has twice the percentage of programs as compared to the percent of national enrollment. Considering the great need for providing women with relevant occupational skills either the flaws of such programs should be changed or efforts should be made to attract potential Home Economic enrollees into other programs with more employment related training.

5) Office Education shows a lower percent of programs than percent of national enrollment. Further, there has been a tremendous growth in enrollments in this area nationally, responding to an increased demand to provide women with relevant skills and the relevance of such skills to both lower level occupations and utility for students bound for college.

6) Technical Education programs in the Region are much lower than national enrollment averages. This is an area which leads to high wage and skill, stable employment and therefore needs increased emphasis.

7) Trades and Industries programs in the Region seem to run slightly higher than national enrollments. Given the fact that the manufacturing employment in the Region is higher than that of the Nation, percentages probably should be even higher still.

The Committee has recommended gathering additional information on Occupational Education in the Region; particularly information relating to enrollments and expenditures. Much valuable assistance has been given by the U.S. Department of Labor, the Bureau of Labor Statistics, and the Bureau of Employment Security, as well as the U.S. Office of Education and the Economic Development Agency.

The Committee is preparing projections for employment by occupation in the Region. These projections will be by major sub-Regions which include commutative work areas beyond the Region's boundaries.

It was initially hoped that certain sets of National data could be employed to predict trends in Appalachia which have not begun as yet. Such data could not be used with any degree of accuracy. However, national industrial figures will be used to ascertain needs by occupational areas.

Adjustment also must be made for nascent demand in such skills as subprofessional personnel in elementary and secondary education and for similar employment in health-related occupations.

Upon completion of these projections those training areas recommended for intensification and/or development, will reflect not only frequency of jobs but also high wages and advancement potential as well as steady employment. These areas will differ between the several states.

In fact, such projections will not be limited to the geographic boundaries of those 13 states, because Appalachia exports much of its manpower to surrounding areas. Out migration is greatest between the ages of 18 and 35. Even though this is decreasing, the expenditure required to train a work force whose wages are earned and spent outside the Region suggests a need for supplemental Federal support. Low skill migrants increase the social cost of urban centers, creating a double cost; a cost to the city if these workers are poorly trained because they will be unemployed and a financial drain on the Region. Because of out-migration the economic drain these workers represent in the Region is great. The economic base of the Region dictates low, non-competitive wage scales. The development of a work force with highly saleable skills would attract industry to the Region and in turn raise the economic level of the area and offer employment at home to many of those who now commute outside the area to work.

The types of occupational training offered can be even more directly related to immediate future growth of the Region. High wage ubiquitious industries of the kind that the Region might readily be attracting have extremely high personnel costs...both in finding trained and potential trainees and providing training for them. The production of relevant occupational skills should provide attraction for such industry. Certainly the lack of adequate occupational preparation has made many an industry decide not to locate within the Region.

On a higher level, training of young people in skills in low demand in the Region particularly in the areas of education and health, would over time tend to increase the demand in the Region for such skills. In this fashion education could be taking the leadership in stimulating the creation of new and added services in the Region.

One last point should be made. It is critical to the operation of an effective educational system that what is taught not be what has always been taught but what needs to be taught. Curriculum decisions should be a matter of public policy, not reiteration on the basis of enrollment, ie. give more money for present curriculum simply because enrollment increases. Enrollment does not always reflect potential; often enrollment in a subject increases because there is no other choice; sometimes it reflects inadequate counseling on possible jobs and on the significance of an alternate opportunity.

The prime responsibility of the schools is first to provide the individual student with a set of marketable skills to make him a contributing member of a growing economy. Secondary responsibilities are to public policy goals of the Region and the Nation and finally to the local economy. For example, if employment opportunities for high wage and skill jobs exist only in limited quantities within a locality, sub-Region or Region and there is a policy demand for such skills within the Region or in the Nation, investment in training programs for such skills should not be limited by the Region's ability to absorb such jobs.

If because of this criterion of primary responsibility to the young people, heavy investments must be made in curricula more relevant to skills outside the Region than in it, then this would further justify heavy additional Federal funding assistance. It is an incontrovertible fact that the Region is currently paying heavily at all levels of education to train those who take jobs outside Appalachia. At the secondary level it is paying heavily to train young people in obsolescent skills. These skills are even less relevant to the urban areas to which these young people migrate than they are within rural Appalachia.

Beyond these decisions on policy, there is additional need for a system which will continuously re-evaluate educational expenditure using established criteria. The next report of this Committee will detail how the projections now being formulated, can be used to ensure critical realistic and continued evaluation of all occupational preparation policies, investments and programs.

It is anticipated that a series of conferences will be held with representative state membership from the fields of manpower, education, employment security, planning and industrial development. Representatives from the Governor's offices would be included as well as persons from appropriate Federal agencies. The conference will report on methods for assessing vocational education as outlined above and provide a plan for using such methods at the State and local level.

Use of projections, such as the Committee staff is developing, cannot be in a completely inflexible manner. This again would inhibit the growth of the Region. Adjustments in priorities must be made at each of three levels. At the local level, adjustments should be made to permit responsiveness to demands of new and existing industry where this is relevant. Where low wage and low skill industry exists, curricula should be planned so that training aims at skills above the level required to enter into such employment but is still, if possible, pertinent to local employment needs. When speaking of a local area for evaluation, often an area larger than a school district or in some cases, several counties might be implied. Projections will be on a sub-Regional basis roughly correspondent to local development district planning areas.

At the State level use of projections should be mediated by three factors. The first is State employment trends; the second, skill needs necessary for attracting new industries; and the third, employment implications in other areas of State activities--particularly in terms of projected State and Federal legislation. The legislative assistants to State Governors should be involved heavily in the manpower planning process.

At the Regional level, consideration of aggregate needs plus major manpower deficiencies relating to major industry placement or needs in the public services sector should affect use of the projections for priority allocation of the Appalachian Regional Commission and other Federal funds.

Facilities

On the secondary level alone, if enrollments for all purposes of vocational education in the Nation (as seen in Table XI) rise from 6 million to 14 million, between 1966 and 1975, an estimated $5.3 billion will be needed for facilities alone. This is at current dollar value. Estimated costs shown in Table XI could well rise by 5% per year.

The focus of improving vocational education programs could conform to simply maintaining the status quo. Table XII shows the number of construction projects by level during the years 1965, 1966, and 1967. Many of the Technical or Vocational schools and all of the Higher Education projects are post-secondary, thus almost half of new construction in the U.S. was at the post-secondary level. Table XIII indicates the support given for Area Vocational School construction by all levels of government for the same three years. The expenditures for all three years at all levels are not equal to the needs of 1965 alone.

If the Appalachian Region is to get its fair share of the estimated national need for the construction of new vocational education facilities, the following sums will be required:

Year	Amount
1967	$47,739,990
1968	38,541,605
1969	83,866,605

These projections are based on 10% of national needs which is approximately the Appalachian share of U.S. population. If, as discussed in an earlier section, we adjust for a decrease in loss rate and an increase in percentage of secondary enrollment these figures could easily be doubled. The Committee will investigate the amount of Federal money for vocational purposes, including construction, spent in the Region and will collect further information concerning facility needs.

Even at this writing it is apparent that although $43,000,000 of the Appalachian Regional Development Act have been used over the last three years to build vocational technical schools this money is inadequate to meet projected needs. Remodelling and replacement of older facilities to accommodate the necessary new curricula will increase these costs even more.

TABLE XI

FACILITY NEEDS TO ACCOMMODATE PROJECTED ENROLLMENTS VOCATIONAL AND TECHNICAL EDUCATION

Year	Enrollment	Enrollment Increased Over Previous Year	New Training Stations Needed[4]	Estimated Cost[5]
1964	4,566,390[1]	---	---	---
1965	5,430,611[1]	864,221	288,074	532,936,900
1966	6,105,838[2]	675,227	225,076	416,380,600
1967	6,880,000[3]	774,162	258,054	477,399,900
1968	7,505,000[3]	625,000	208,333	385,416,050
1970	9,600,000[3]	2,095,000	698,333	1,291,916,050
1975	14,000,000[3]	4,400,000	1,466,667	2,713,333,950
Totals	---	9,433,610	3,144,537	$5,817,393,450

1/ Actual enrollment. 2/ Provisional enrollment. 3/ Projected enrollment.

4/ Training stations needed are calculated on the basis of each station serving three different students in classes operated--one in the morning; one in the afternoon; and one in the evening.

5/ Estimated costs for facilities are calculated by multiplying the number of new training stations needed by $1,850. Justification for the cost of $1,850 per student-training station is indicated as follows:

> A sampling of 20 contracts for school construction accomplished in 1965 in several States reveals a median cost of $1,890 per pupil. Cost data are based on 1965 contract data published in Engineering News Record. Cost per pupil ranged from a State average of $882 to $4,300. Average cost per square foot ranged from $11 to $25. The norm was a little better than $20.
>
> Previous projections when correlated with States' reported construction indicated average cost of $1,850 per pupil or per training station, and $20 per square foot. These costs were derived from an estimated total of $85+ million for constructing 1,978 classrooms, shops, and laboratories.
>
> The estimated cost to provide the training stations needed for the increased enrollments projected for the years 1966 to 1975 does not reflect the increased cost of construction and favilities that has occurred since 1965, and that will probably occur in the years to 1975.

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education, March, 1967.

TABLE XII

AREA VOCATIONAL SCHOOL CONSTRUCTION PROJECTS AUTHORIZED IN FISCAL YEARS 1965 and 1966 (VOCATIONAL EDUCATION Act OF 1963 AND APPALACHIAN REGIONAL DEVELOPMENT ACT OF 1965) U.S.

	Actual				Projected	Total
Type of School	1965	1966	Total	% of Total	Fiscal Year 1967	Actual and Projected
Specialized High Schools	44	28	72	16%	46	118
Depts of a High School	73	108	181	40%	82	263
Technical or Vocational Schools	56	67[1]	123[1]	27%	89[2]	212[3]
Higher Education	41	36	77	17%	57	134
Totals	214	239	453[1]		274[2]	727

---

[1] Includes 10 projects funded under Appalachian Regional Development Act of 1965.

[2] Includes 28 projects funded under Appalachian Regional Development Act of 1965.

[3] Includes 38 projects funded under the Appalachian Regional Development Act.

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U.S. Office of Education. March 1967.

Some notion of how enrollments and expenditures compare in relative terms is shown in Table XIV.

TABLE XIII

AREA VOCATIONAL SCHOOL CONSTRUCTION EXPENDITURES (INCLUDING MATCHING FUNDS) (VOCATIONAL EDUCATION ACT OF 1963 AND APPALACHIAN REGIONAL DEVELOPMENT ACT OF 1965) U.S.

Source of Funds	Fiscal Year	Total	Federal	State	Local
Vocational Ed. Act of 1963	1965	$107,725,963	$ 42,729,943	$16,053,789	$ 48,942,231
Vocational Ed. Act of 1963	1966	163,619,914	61,149,632	25,799,634	76,670,648
Appalachian Reg. Dev. Act of 1965	1966	13,774,489	8,583,110	2,444,297	2,747,082
Sub-total	1966	$177,394,403	$ 69,732,742	$28,243,931	$ 79,417,730
Vocational Ed. Act of 1963	1967 1/	162,618,300	$ 65,047,320	$33,523,000	$ 64,047,980
Appalachian Reg. Dev. Act of 1965	1967 1/	33,539,532	21,162,000	5,778,462	6,599,070
Sub-total	1967 1/	$196,157,832	$ 86,209,320	$39,301,462	$ 70,647,050
Total 1965, 1966, and 1967		$481,278,198	$198,632,005	$83,599,182	$199,007,011

1/ Projected.

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. March, 1967.

Recommendations

Given a continuing and increasingly high investment in post-secondary and adult programs plus an extremely slow adjustment of secondary offerings to occupational demands, several alternative routes are possible. One short term solution would be to permit secondary students to enroll in post-secondary and adult programs when such are not offered at local high schools. Several Appalachian States are already working toward this goal. There are several benefits to such an approach. First, it would decrease the facilities needs, permitting one facility to serve several different program levels. Secondly, it would necessitate less expenditure on costly and sophisticated equipment. Thirdly, vocational education currently suffers from a poor "image" and the image presented to a secondary student of post-secondary courses would be beneficial. Such a plan would provide an even greater inducement to take occupational training for many students if they could go away from home to such post-secondary centers.

The deficits are so great, however, that this plan could provide little more than an interim solution in most Appalachian States. Where a heavy investment has already been made in post-secondary education this approach should be seriously considered. Where such investment does not already exist, investment should be in secondary programs. Current post-secondary offerings do not begin to meet the needs of current populations, much less the enrollments anticipated, and inclusion of secondary students would reduce space available for students at the post-secondary and adult levels. Secondly, secondary students will require curricula with lower entry level and probably need remedial academic work which will tend to degrade the quality of the post-secondary offerings. Many counties have extremely small High school populations and superintendents would be loathe to permit such an outflow of students to post-secondary institutions in fear of reducing school size to a point where accreditation might be lost, or lose students needed to qualify for Federal support. Migration of secondary students to more distant post-secondary institutions would raise already great transportation costs and would probably necessitate an increase in the need for investments in residential facilities (for which there is little current Federal support). At the secondary level, however, there is no Federal assistance for residential schools, while post-secondary institutions might qualify for such funds under a variety of sources.

The major problem, however is the inadequacy of secondary programs. Limited availability of relevant quality programs undoubtedly has a quantitative effect on the dropout problem. Certainly there is a significant percentage of students who face the world with a High School education or less and these typically form the major portion of the hard-core unemployed that constitute the greatest social cost. Given limited resources, major financial commitments must be made on the secondary level on a priority basis and it is hard to justify increasing commitments on the post-secondary level, on the basis that it will do something for secondary students, in view of all the problems generated.

Expenditures

Because of the tremendous need for new programs and facilities, the past sources and use of vocational funds must be considered. Table XIV shows the national expenditures on vocational education at all levels by occupational category for the years 1964, 1965, and 1966.

Certain trends are apparent. Although agricultural employment is declining at a precipitous rate (20% by 1975), Federal funds used by the States for agricultural education programs have almost doubled in 1966 over 1964. Federal expenditures on Health Occupations programs rose less than 25% in the same time period despite a health manpower gap of unprecedented proportions. State and local Government monies seem to have been used to respond to the changing occupational outlook, although new liberal Federal legislation was provided for State use primarily for this purpose. Non-Federal support of agricultural programs did not change appreciably over the 1964 to 1966 period. If Federal funding sources continue to be used to support declining occupational patterns, this could erode any efforts to make vocational programs more relevant to employment opportunities.

Table XV depicts national trends in Vocational Education expenditures. Federal expenditure is increasing very rapidly, local funds are also increasing, but less rapidly and state support is not increasing proportionately. Federal funds are being provided to state agencies to increase control over and leadership in Vocational Education. Some states in Appalachia have apportioned little or no money for support of Vocational Education. This support is critical because small rural districts cannot afford even necessities. Secondly, the use of additional Federal dollars depends on the ability of the state to proportionately match them.

Federal legislation is responsive to the economies of size and does not permit construction of facilities offering less than five separate vocational categories which in turn requires a minimum student population of 1,200 to 1,500. Many local Appalachian districts have considerably smaller population at the High School level and will require state help to combine districts for area vocational schools. Since the flow of Federal funds goes to the projects and schools that can provide five or more offerings, the rural district is penalized because of its size, and is unable to compete successfully for the necessary funds to improve its secondary vocational education.

This is further complicated by the fact that the legal problems involved in providing state support for vocational education also need to be studied. In some places within the Region counties are prohibited from combining their own meager resources for the construction and operation of area schools. Plans should be devised to provide meaningful cooperative educational services - especially to the numerous small school districts within the Region.

TABLE XIV

COMPARISON OF EXPENDITURES BY OCCUPATIONAL CATEGORIES
FISCAL YEARS 1964 - 1965 - 1966
VOCATIONAL AND TECHNICAL EDUCATION - U.S.

Occupational Category	Expenditures					Percent of Total
	Federal	%	State and Local	%	Total	
	Fiscal Year 1964					
Agriculture	$ 13,719,186	24.9	$ 63,755,225	22.9	$ 77,474,411	23.3
Distribution and Marketing	2,580,112	4.7	12,302,366	4.4	14,882,478	4.5
Fisheries	92,867	.2	150,099	.5	242,966	0.1
Health	4,760,405	8.7	7,696,333	2.7	12,456,738	3.7
Home Economics	8,874,010	16.1	80,998,222	29.1	89,872,232	27.0
Office	---		---		---	---
Technical	13,596,803	24.7	21,310,109	7.8	34,906,912	10.5
Trades and Industry	11,403,492	20.7	91,545,885	33.0	102,949,377	30.9
Totals	$ 55,026,875		$277,758,239		$332,785,114	100.0
	Fiscal Year 1965					
Agriculture	$ 20,423,145	19.0	$ 66,417,083	17.4	$ 86,840,228	17.8
Distribution and Marketing	4,595,464	4.3	16,996,257	4.5	21,591,721	4.4
Fisheries	76,514	.7	301,253	.8	377,767	0.1
Health	5,349,678	5.0	14,354,499	3.7	19,704,177	4.0
Home Economics	9,769,382	9.1	88,639,428	23.3	98,408,810	20.2
Office	12,119,989	11.3	41,553,470	10.9	53,673,459	11.0
Technical	21,027,220	19.6	41,585,222	10.9	62,612,442	12.8
Trades and Industry	34,024,135	31.7	110,858,121	29.1	144,882,256	29.7
Totals	$107,385,527		$380,705,333		$488,090,860	100.0

TABLE XIV (continued)

Occupational Category	Expenditures					Percent of Total
	Federal	%	State and Local	%	Total	
	Fiscal Year 1966					
Agriculture	$ 25,447,075	17.7	$ 63,091,563	14.5	$ 88,533,638	15.3
Distribution and Marketing	6,945,482	4.8	20,541,236	4.7	27,486,718	4.7
Fisheries	288,573	.2	391,401	.9	679,974	0.1
Health	6,208,023	4.3	15,683,769	3.6	21,891,792	3.8
Home Economics	10,969,889	7.6	98,947,809	22.7	109,917,698	19.0
Office	22,907,382	16.0	62,565,720	14.4	85,473,102	14.8
Technical	19,750,760	13.8	38,805,567	8.9	58,556,327	10.1
Trades and Industry	50,888,432	35.5	135,236,011	31.1	186,124,443	32.2
Totals	$143,405,616		$435,263,076		$578,668,692	100.0

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U.S. Office of Education, March 15, 1967.

TABLE XV

NATIONAL TRENDS IN TOTAL EXPENDITURES FOR VOCATIONAL AND TECHNICAL EDUCATION 1964-1966 (MILLIONS)

	Fiscal Year					
	1964 Actual		1965 Actual		1966 Provisional	
	Expenditures	%	Expenditures	%	Expenditures	%
Totals	$333	100.0	$605	100.0	$792	100.0
Federal	55	16.5	157	26.0	235	29.7
State and Local	278	83.5	448	74.0	557	70.3
State	125	37.5	187	31.0	213	26.9
Local	153	46.0	261	43.0	344	43.4
Ratio - State and Local to Federal Dollars	$5.05 to $1.	---	$2.90 to $1.	---	$2.38 to $1.	---

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. March, 1967.

TABLE XVI

NATIONAL TRENDS IN EXPENDITURE PERCENTAGES FOR VOCATIONAL AND TECHNICAL EDUCATION BY PURPOSE VOCATIONAL EDUCATION ACT OF 1963

	Percentage in Fiscal Year		
	1965 Actual	1966 Provisional	1967 Projected
Totals	100.0	100.0	100.0
Secondary	32.3	32.7	32.4
Post-Secondary	13.4	15.1	17.6
Adult	6.1	4.5	6.1
Special Needs	.3	1.1	3.3
Construction	42.6	36.7	30.1
Ancillary	5.3	9.9	10.5

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. March, 1967.

Recommendations

The Committee is in the process of gathering further information concerning expenditures and their use by category within the Region. Table XVII shows that projected levels of Federal expenditures will not begin to meet the needs of the Region. It is already apparent that additional State support will be needed in order to provide for the vocational needs of the Appalachian student. State residential schools could be built to serve large area bases. At least one State has already done this on the post-secondary level.

Projected revenue from Federal sources and proportionately decreasing State and local revenues indicate that the need for secondary occupational preparation alone cannot be met from all sources. States must set priorities among levels and among programs. Tables XVIII and XIX show one method by which expenditure categories can be related to occupational demand. In Table XVIII we find that percent of expenditures in a number of categories exceed percent of enrollments. Certainly some programs must of necessity cost more than others, but their occupational relevance must also be examined. It has been argued that increasing enrollment in vocational agriculture provides a cheap vocational education to a maximum number of students. However, it is apparent that vocational agriculture programs cost more per student than the Distribution and Marketing curriculum for example.

On Table XIX and XX we find that expenditures, related to percent of actual employment and percent of employment required are considerably out of balance in several categories. Vocational Agriculture for West Virginia shows that by 1975 expenditures will be three times as great as the percent anticipated demand for its program graduates. In the Nation it will be almost double. Current and projected expenditures on vocational agriculture then, are in large part negative expenditures.

Necessarily, the Committee will concern itself with all aspects of this problem, hoping to develop a method by which all programs and related expenditures can be fairly assessed.

Teacher and Administrative Support

If the financial needs for construction seem large, the need for teachers appears almost defeating. Between 1966 and 1975, one quarter of a million new teachers are estimated to be needed, which is over

TABLE XVII

AUTHORIZATIONS AND APPROPRIATIONS UNDER FEDERAL VOCATIONAL EDUCATION ACTS

(In Millions)

	Vocational Education Act of 1963				
Fiscal Year	Available to States	Research and Development Grants	Work-Study	Smith-Hughes and George-Barden Acts	-Totals
		Authorizations			
1960	---	---	---	47.8	47.8
1964	54.0	6.0	---	57.15	117.15
1965	106.65	11.85	30.0) -) 4	57.15	205.65
1966	159.75	17.75	50.0)) yrs.	57.15	284.65
1967	202.5	22.5	35.0))only	57.15	317.15
1968	202.5	22.5	35.0)	57.15	317.15
	and thereafter				
		Appropriations			
1960	---	---	---	47.8	47.8
1964	---	---	---	56.92	56.92
1965	106.65	11.85	5.0	56.96	180.46
1966	159.75	17.75	25.0	57.15	259.65
1967	198.23	10.0	10.0	57.15	275.38
1968[1/]	199.31[1/]	17.10[1/]	0	57.15[1/]	273.56[1/]

[1/] President's Budget, FY 1968.

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. March, 1967.

TABLE XVIII

NATIONAL TRENDS IN ENROLLMENT AND EXPENDITURE PERCENTAGES IN VOCATIONAL AND TECHNICAL EDUCATION BY CATEGORY

Occupational Category	Percentages in Fiscal Year					
	1964 Actual		1965 Actual		1966 Provisional	
	Enrollment	Expenditures	Enrollment	Expenditures	Enrollment	Expenditures
Totals	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	18.8	23.3	16.3	17.8	14.9	15.3
Distribution and Marketing	7.3	4.5	6.1	4.4	6.9	4.7
Health	1.3	3.7	1.2	4.0	1.4	3.8
Home Economics	44.3	27.0	38.7	20.2	31.5	19.0
Office	---	----	13.5	11.0	20.3	14.8
Technical	4.8	10.5	4.2	12.8	4.2	10.1
Trades and Industry (Includes Fisheries)	23.5	31.0	20.0	29.8	20.8	32.3

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S. Office of Education. March, 1967.

Table XV indicates the trend in expenditures among the occupational categories in the 1964-66 time period.

TABLE XIX

PERCENT OF PEOPLE WORKING FOR WHICH SPECIFIED VOCATIONAL PROGRAMS WOULD HAVE PREPARED THEM AND RELATIVE EXPENDITURE BY VOCATIONAL PROGRAM. WEST VIRGINIA, 1957 and 1975 (estimated)

Vocational Program	1957		1975	
	Percent working	Percent of total expenditures	Percent working	Percent of total expenditures
Agriculture	11.6	28.4	6.6	18.3
Distribution	7.4	3.0	7.9	3.6
Health Occ (a)	1.6	1.4	2.4	2.0
Home Econ	2.6	30.4	3.5	26.5
Office Occ.	24.4	(b)	28.8	9.1
Tech. Ed.	.9	-	.8	1.5
Trades-Ind.	51.4	36.8	50.1	39.0

(a) George-Barden Act, Title II.
(b) Not considered a part of Vocational Education until 1963.

TABLE XX

PERCENTAGE DISTRIBUTION OF PROJECTED ENROLLMENTS BY OCCUPATIONAL CATEGORIES AND PROJECTED MANPOWER REQUIREMENTS. UNITED STATES. 1970 and 1975

Occupational Category	1970		1975	
	Enrol.	Req.	Enrol.	Req.
Agriculture	11.0	7.8	9.0	5.6
Distribution	9.0	7.3	10.0	7.5
Health Occup.	7.0	2.5	10.0	2.7
Home Economics	24.0	3.6	15.0	3.9
Office Occup.	15.5	29.3	17.0	29.9
Technical	7.0	0.7	9.0	0.7
Trade and Indus.	26.5	49.7	30.0	49.7

SOURCE: Office of Education.

100,000 short of the projected enrollment in vocational and technical education teacher training programs. This 100,000 shortage, it must be emphasized, is in enrollment--not the actual number of people who elect to teach upon graduation, which is always less than enrollment. If vocational education teachers are scarce nationally, due to a lack of sufficient number of programs to prepare them, and extremely low wage and salary scales compared to the competing needs of industry. Most vocational instruction personnel are paid at the same salaries as other teachers and yet their alternative for employment is typically much greater at higher wages. They are even more scarce in Appalachia. Tables XXI and XXII indicate these needs.

There has been a gradual reduction in the teacher-student load in programs of vocational and technical education in recent years. In fiscal year 1964, actual statistics show one teacher for each 54 students enrolled.

In 1965, the teacher-student load dropped to one teacher for 50 students enrolled; and in 1966, to one teacher for 48 students enrolled.

It is anticipated that the teacher-student load in vocational and technical education programs will continue to drop. Projections indicate in 1970, one teacher to 45 students enrolled; and in 1975, one teacher to 40 students enrolled.[1] In order to be effective it must drop considerably more. Vocational classes are generally one-half the size of academic classes. This means that twice the number of teachers will be needed for the same student population.

An analysis of pre-service training programs for fiscal years 1964, 1965, and 1966 indicates that the number enrolled in pre-service teacher training programs averaged approximately 30 percent of the number of teachers employed each year in all programs. As enrollments increase and new and emerging occupational training programs are developed, programs to prepare fully-qualified teachers must be accelerated.

To meet the requirements of new programs and to provide replacements for teachers leaving each year, will require that the percentage enrolled in pre-service programs be maintained at 30-35 percent of the total number of teachers employed. Increased projections based on 35 percent would supply a potential of approximately 20,000 new teachers each year. Additional teachers needed to staff programs should be recruited from business, industry, military, and other sources.

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[1] Data are from Division of Adult, Vocational and Library Programs, U.S. Office of Education.

TABLE XXI

ACTUAL AND PROJECTED NUMBER OF TEACHERS VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS

(UNITED STATES)

Year	Number of Teachers	
1964	85,102	- Actual
1965	109,136	
1966	124,729	
1967	146,383	- Projected
1968	163,150	
1970	213,300	
1975	350,000	

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs, U. S, Office of Education, March, 1967.

TABLE XXII

ACTUAL AND PROJECTED ENROLLMENTS IN TEACHER EDUCATION PROGRAMS VOCATIONAL AND TECHNICAL EDUCATION

(UNITED STATES)

Year	Total	Pre-Service	In-Service	
1965	69,051	33,771	35,280	- Actual
1966	77,091	38,774	38,317	
1967	102,000	50,500	51,500	- Projected
1968	114,000	56,000	58,000	
1970	149,300	73,500	75,800	
1975	245,000	121,000	124,000	

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs. U. S. Office of Education. March, 1967.

Recommendations

The slow reaction time between the new occupations and new teacher training courses, coupled with the lack of relevant occupational information curricula for teachers, vocational teachers, and guidance personnel strongly suggest that new sources of such personnel must be found. Programs such as: 1) sabbatical for industry personnel; 2) greater use of employment security personnel; 3) summer industry employment for teachers; 4) use of industry training materials and personnel in the schools; 5) industry advisory committees; and 6) development of para-professional vocational and technical education personnel; and many others should be encouraged.

Approximately 30 percent of the total number of teachers were enrolled in in-service programs in fiscal years 1964, 1965 and 1966.

To meet the changing requirements for teachers in vocational and technical education will require increased participation in in-service programs to continuously improve their teaching competencies. Projected enrollments in in-service programs are based on increasing the percentage to approximately 35 percent of the total teachers employed in 1970 to 1975.[1]

Vocational programs, however, need more than teachers to make them operational. In this connection, the critical need for administrative and ancillary personnel at the state and local level is very large indeed. Over 13,000 already-scarce personnel will need to be found by 1975. This need is shown in Table XXIII, where one may suppose the requirement for Appalachia to be just as large--relatively, perhaps more so.

Administrative and other ancillary personnel increased in fiscal year 1966 over fiscal year 1965 approximately 25 percent at the state level and 23 percent at the local level. The increases reflect the rapid expansion of vocational-technical education programs at all levels under the provision of the Vocational Education Act of 1963.

State projections of needs and an analysis of trends in enrollment and programs indicate an average yearly increase of approximately 5 percent for personnel at the state level and 7 percent at the local level.[2]

The bulk of this necessary growth of administrative staff must be in the fields of counselling.

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[1] Division of Vocational and Technical Education, Bureau of Adult Vocational, and Library Programs, U.S. Office of Education, March 1967.

[2] Ibid.

TABLE XXIII

ACTUAL AND PROJECTED STATE AND LOCAL ADMINISTRATIVE AND OTHER ANCILLARY PERSONNEL IN VOCATIONAL EDUCATION (UNITED STATES)

	Fiscal Year						
STATE LEVEL	1965[1]	1966[1]	1967	1968	1969	1970	1975
Directors or Supervisors	336	360	372	385	405	425	530
Assistant Directors or Supervisors	370	414	420	430	450	470	650
Area Supervisors	303	298	340	380	420	460	740
Youth Specialists	38	28	50	75	80	90	145
Teacher Trainers	52	56	58	60	65	68	90
Itinerant Teachers	141	177	185	190	200	210	235
Research Specialists	19	58	62	65	68	70	90
Guidance Specialists	36	51	65	70	75	85	95
Curriculum Specialists	37	52	54	60	65	70	90
Work-Study	31	28	25	---	---	---	---
Other	111	135	135	135	140	150	200
Sub-Total	1,474	1,658	1,766	1,850	1,968	2,098	2,865
Institutions							
Teacher Trainers	1,571	2,145	2,359	2,480	2,560	2,098	3,150
Total State	3,045	3,802	4,125	4,330	4,528	4,738	6,015
LOCAL LEVEL							
Directors or Supervisors	2,729	2,936	3,106	3,275	3,600	3,950	5,675
Guidance Specialists	874	962	985	1,000	1,025	1,050	1,200
Curriculum Specialists	162	123	135	142	150	160	200
Work-Study	72	607	450	---	---	---	---
Other	271	313	310	310	330	350	450
	4,108	4,941	4,986	4,727	5,105	5,510	7,525
Total State and Local	7,153	8,743	9,111	9,057	9,633	10,248	13,540

[1] Actual--all other years projected.

SOURCE: Division of Vocational and Technical Education, Bureau of Adult, Vocational, and Library Programs. U. S. Office of Education. March, 1967.

None of the above objectives for vocational education in Appalachia can be accomplished unless a strong guidance program is initiated. Although some of this need may be absorbed by good occupational information curricula, the sub-committee is already exploring the types, quantity and sources for such counselling personnel. The youth of the Region need personal help in selecting courses, adjusting to existing programs, and advice on future work plans and job availability. Current teacher counsellor ration is 1:1300 primarily at the secondary level. Most of these are oriented to helping the college-bound student and have little training in vocational opportunities, requirements or placement.

Demand for counsellors in the Region far exceeds that of the nation, and they must be new vocationally oriented breed with new type of training.

Current liaison in Appalachia between industry, employment security, schools, colleges, and State Departments of Education is at best spotty, at worst, totally non-existent. Education should take the lead in forging such relationships and begin to break down barriers in terms of certification requirements, minimum State support for vocational personnel, and out-moded teacher training curricula:

Conclusions

1. Vocational education programs in Appalachia appear to be oriented to instructional programs with declining relevance, and focus on low-wage employment not consonant with the changing participation rates of women in the labor force. With the encouragement of new programs in the Vocational Education Act of 1963, the Appalachian States have increased the number of job relevant programs. Still the bulk of these new monies have been used to expand the traditional non-job relevant programs in the Region. (See Table XIV, p. 52-53).

2. As a matter of public policy there must be a massive change in investment patterns to support more modern occupational offerings leading to stable high wage employment responsive to national and regional development goals. As Appalachia's capacity to absorb such personnel is initially quite low in some skill areas this would justify increased preferential Federal investment.

3. Some programs--such as distributive education and office occupations--support the rising trend of employment in services, tend to serve both men and women equally, and should be strengthened. Similarly, there should be an increase in para-professional programs in health occupations, and education given the manpower shortages and huge investments in facilities and equipment.

4. Programs in Trade and Industry in secondary schools appear to do more for the potential dropout than other programs and have particular relevance to Appalachia.

5. There are not enough programs to serve special needs. The Region has more than its share of individuals needing special education and hence has a claim on resources for program support.

6. A method should be developed to relate employment projections to curriculum planning.

7. Student attrition rates are high and do not appear to be influenced by the presence or absence of the current vocational programs. This may be due to inadequate counselling and unattractive curricula.

8. There is a clear need to develop a set of course priorities. These priorities would take into account the purposes of the program, and the relevance of the occupational categories for employment opportunities.

9. Relevant data on vocational education at the county level are not readily available. There is a need to develop a total management information system for vocational education at all levels. No valid projections exist for para-professional needs in health and education, although the needs are great.

10. There should be more investment in secondary programs and, if possible, the trend in financing post-secondary programs should be continued.

11. Occupational information curriculum should be developed for the 7th, 8th, and 9th grades, if not earlier, and should be accompanied by stronger guidance programs.

APPENDIX A

A SUGGESTED WAY TO RELATE EMPLOYMENT TRENDS AND VOCATIONAL EDUCATION PLANNING

The Vocational Education Act of 1963 obligates the various State Employment Services[1] to make available to State and local boards of education " . . .occupational information regarding reasonable prospects for employment. . ." The Bureau of Employment Security (BES) now has underway a study to make available to State Boards of Education manpower projections that will help:

a. develop pertinent curricula

b. plan construction programs

c. estimate personnel needed by local school systems, and

d. provide guidance for students

The main focus of this effort is to relate 603 job titles in the Dictionary of Occupational Titles to the seven occupational categories used in planning vocational education programs--Agriculture, Distribution, Home Economics, Office Education, Health Occupations, Technical Education, and Trade and Industry. The coupling of these two data series will provide vocational planners with precise requirements for the jobs that are actually being performed in American industry. Counseling information should be job relevant and as current as the Dictionary of Occupational Titles. However, employment projections will not emerge from this effort. To get at employment projections, more will need to be done. It is the purpose of this part of the Progress Report to sketch out, in broad outline, the conceptual framework of a projection system which, when combined with the BES effort cited above, can provide (1) the ". . .occupational information regarding reasonable prospects for employment. . ." which the Vocational Education Act of 1963 seeks to make available to educational planners.

Present Data Sources

The most comprehensive set of data on employment is, of course, the decennial Census. The data are actual employment numbers, by industry, with industry described in well-defined terms standardized by the Bureau of the Budget through the Standard Industrial Classification Manual. At times intercensal studies update these data which, over the years, provide a basis upon which future employment projections, by industry, can be made.

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[1] Bureau of Employment Security, MIMEO, N.D.

While employment projections are made by several agencies, the Bureau of Labor Statistics attempts to provide projections by major occupation groups or "clusters" and by selected occupations. A major occupation group would be "white-Collar workers", or "craftsmen, foremen, and kindred workers". A selected occupation would be "bakers" or "machine tool operators".

If the educational training of guidance counselors included detailed studies of these data series, and if there were enough counselors with adequate time, perhaps these projections would be adequate for broad natinal planning. But (1) educational planners are not, as a rule, familiar with these series, and (2) they tend to be applicable to geographic areas which are broader than the locality planning curricula. Thus, the broad educational groupings and areas which national data series point up, are just not applicable to the essentially local nature of curriculum planning. For a system to be operationally meaningful at the local level, employment projections need to be made both meaningful to local economies, or accessible areas, and consonant with the public policies of:

1. Providing the basic skills which will permit retraining as occupational change. (A standard caveat is that the average American will need retraining seven times during his working life).
2. Training to the limit of the young persons ability--ideally for high wage and high skill relatively stable employment with opportunities for advancement.
3. Providing skills that will make the trainee stable regardless of his geographic location.
4. Augmenting personnel supply to meet critical national, State and local manpower objectives and,
5. Providing skills--the presence of which will attract desirable industry to the area(s).

All of these goals must be translated into curricular terms.

To begin with, the Bureau of Census industry data, plus the Bureau of Labor Statistics projections by occupational groupings and selected occupations, need to be coupled with the data available in the Dictionary of Occupational Titles, and re-grouped into curricula planning clusters.

Schematically, this is:

Industry Employment Data
(Bureau of Census)
↓
Occupational Groupings Data
(Bureau of Labor Statistics)
↓
Dictionary of Occupational Titles
(Bureau of Employment Security)
↓
Curricula Planning Terms
(Local Education authorities)

Of course, when these data series are combined, it will be possible to eliminate the several levels suggested in the scheme above--that is, curricula needs can be grouped at the national level for policy planning purposes and national projections can be made in curricula terms. This will help some--but one must keep in mind the essentially local nature of educational planning and reaslize that for local purposes this "new" system would be interesting, but still not totally useful. This lack of total usefulness arises from the national projections from whence the series starts. One must get down to the local level, whether "local" is defined as a school system, a region, a sub-region, or a county, before any coupling of relevant curricula planning vis-a-vis economic planning can be made. Once projections are co-extensive with decision points in curricula structure, then relevant "togetherness" can be achieved, but until this is done educational planners are chasing a will-o-the wisp--and the race is not even close.

When these data have been combined, the local economic planners then need to gather and adjust the results by local projections that are statistically reliable. With a very high mobility factor that varies with each local planning point, contiguous areas and accessible job-points could be included in the educational planning of any school district which wished to do so. Thus, Cherokee County, North Carolina, could include the economic projections of the Asheville Metropolitan Area. Large school systems, such as Pittsburgh, could include the entire states of Ohio, Pennsylvania and West Virginia. This decision would depend upon what the local variation and migration patterns are. Once the basic employment projections are available at the various levels of relevant aggregation, educational planners can assume the job of vocational education planning, using relevant employment predictions. For economic development, the use of regional occupational projections could be a major positive thrust toward the type of industry and wage-levels desired.

Employment Projections and Vocational Categories

To translate employment projections into curricula terms for educational planning purposes, these steps should be taken:

1. Secure actual employment data at some point in time, classified by relevant industry classifications. In Table I, that follows, an 11-industry classification is used.

2. Peruse the Standard Terminology for Instruction in Local and State School Systems (third draft), Office of Education, May 1967, and relate each of the occupations in the Census of 1960 to an educational category used by vocational education planners.[1]

3. Relate the employment in each to these categories, to the total employment in each of the relevant industrial classifications. This gives an "employment ratio" for each of the industry-vocational category. For example, 92.51 percent of all employees in Agriculture and Foresty could have been trained thru programs in agriculture; 1.14 percent of all mining employees could have been trained thru programs in agriculture, and so on. Table I shows these ratios.

4. Secure projections in terms of the same industries for desired years, and use the ratios for purposes of estimation. Of course, the further in the future one goes, the less reliable the estimates become. Also, ratios should be based on the geographic area consistent with curricular planning. This are may be as small as a county, but the smaller the planning unit, the less reliable the projections tend to become. For the illustration we are using, the ratios are national and are applied to West Virginia.

AN ILLUSTRATION

West Virginia, lying wholly within Appalachia, can be used to illustrate the relatively simple methodology outlined above. Tables II and III show the changes which the methodology would illuminate between 1957 and 1975.[2]

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[1] The National Center for Educational Statistics, Division of Operations Analysis, Economics Branch, has done some pioneering work in this methodology, outlined in great detail in AN-64, Occupations Education Requirement Analysis, by William C. Marsch and Jeanne Griest, May 16, 1967.

[2] The data for employment in 1957 and 1975 are taken from the National Planning Association's Center for Economic Projections, Economic and Demographic Projections for Two Hundred and Twenty Four Metropolitan Areas, Volume I, Regional Economic Projections Series, Reports No. 67-R-1, pages S-32 through S-140. All other data are derived from the basic ratios shown in Table I.

TABLE I

RELATIVE DISTRIBUTION OF VOCATIONAL SKILLS BY VOCATIONAL CATEGORY BY INDUSTRIAL CLASSIFICATION 1960 - ESTIMATES

United States

	Vocational Categories						
Industrial Classification	Agriculture	Distrib. and Marketing	Health Occup.	Home Economics	Office Occup.	Technical Education	Trades and Industry
Agriculture, Fisheries	.9251	.0028	.0014	.0002	.0133	.0091	.0454
Mining	.0114	.0032	.0000	.0000	.1315	.0065	.7760
Construction	.0042	.0026	.0000	.0018	.1462	.0078	.7886
Manufacturing	.0094	.0398	.0016	.0018	.1817	.0111	.6752
Communications, Transportation, etc.	.0048	.0106	.0004	.0055	.2856	.0055	.6047
Wholesale Trade	.0117	.2544	.0000	.0022	.4270	.0027	.2499
Retail Trade	.0014	.2978	.0008	.0036	.3063	.0000	.3330
Finance, Insurance	.0159	.2678	.0007	.0119	.5903	.0011	.0746
Other Services	.0080	.0096	.1071	.1566	.1678	.0048	.2419
Federal Government	.0151	.0017	.0045	.0022	.6399	.0156	.1731
State and Local Government	.0226	.0029	.0066	.0051	.3606	.0088	.4460

Source: National Center for Educational Statistics, Division of Operations Analysys (Working Paper) nd.

TABLE II

TOTAL EMPLOYMENT AND NUMBER WORKING AT JOBS IN WHICH SPECIFIED VOCATIONAL EDUCATIONAL PROGRAMS WOULD HAVE PREPARED THEM
WEST VIRGINIA - 1957 - IN THOUSANDS

Employment Category	Total Employment	Agricultural	Dist.	Vocational Health Occupat.
Agriculture, Forests, Fishing	63.3	58.60	.18	.09
Mining	67.4	.77	.22	-
Construction	35.1	.14	.09	-
Manufacturing	135.6	1.27	5.40	.22
Communications	53.9	.26	.57	.02
Wholesale, Trade	23.6	.27	6.00	-
Retail Trade	79.6	.10	23.70	.06
Finance, Insurance	13.3	.21	3.56	.01
Services	77.2	.62	.74	8.23
Federal Government	10.6	.16	.18	.05
State, Local Government	46.9	1.05	.14	.31
Total	606.6	63.45	40.78	8.99
Percent of total Employment Trained in each vocational program*	100.00	10.46	6.72	1.48

Source: Calculated from National Planning Association, Center for Economic
Hundred and Twenty Four Metropolitan Areas, Report 67-R-1, Volume
Division of Operations Analysis, National Center for Ecuational

*Will not add to 100 due to rounding.

TABLE II CONTINUED

Programs				Total Trained in Voc. Educat. Programs	Percent in Emp. Categ. Trained in all Vocat. Programs
Home Econ.	Office Occup.	Tech. Educ.	Trades Indust.		
.01	.84	.58	2.87	63.17	100.00
--	8.86	.43	52.30	62.58	92.84
.06	5.13	.27	27.68	33.37	95.07
.02	24.64	1.51	91.56	124.62	91.90
.30	15.40	.30	32.60	49.45	91.74
.05	10.08	.64	5.90	22.94	97.29
.29	24.38	--	26.51	75.04	94.27
.16	7.85	.01	..99	12.79	96.16
13.09	12.95	.37	18.67	54.67	70.82
.02	6.78	.16	1.83	9.18	86.60
.24	16.90	.41	20.92	39.97	85.22
14.24	133.81	4.68	281.83	547.78	
2.35	22.05	.77	46.46	90.30	

Projections, Economic and Demographic Projections for Two
I, and AN-64, Occupation Education Requirements Analysis,
Statistics, May 16, 1967. Table 1, p. 12.

TABLE IV

PERCENT OF PEOPLE WORKING FOR WHICH SPECIFIED VOCATIONAL PROGRAMS WOULD HAVE PREPARED THEM AND RELATIVE EXPENDITURE BY VOCATIONAL PROGRAM. WEST VIRGINIA, 1957 and 1975 (estimated)

Vocational Program	1957		1975	
	Percent working	Percent of total expenditures	Percent working	Percent of total expenditures
Agriculture	11.6	28.4	6.6	18.3
Distribution	7.4	3.0	7.9	3.6
Health Occ (a)	1.6	1.4	2.4	2.0
Home Econ	2.6	30.4	3.5	26.5
Office Occ.	24.4	(b)	28.8	9.1
Tech. Ed.	.9	-	.8	1.5
Trades-Ind.	51.4	36.8	50.1	39.0

(a) George-Barden Act, Title II.
(b) Not considered a part of Vocational Education until 1963.

TABLE V

PERCENTAGE DISTRIBUTION OF PROJECTED ENROLLMENTS BY OCCUPATIONAL CATEGORIES AND PROJECTED MANPOWER REQUIREMENTS. UNITED STATES. 1970 and 1975

Occupational Category	1970		1975	
	Enrol.	Req.	Enrol.	Req.
Agriculture	11.0	7.8	9.0	5.6
Distribution	9.0	7.3	10.0	7.5
Health Occup.	7.0	2.5	10.0	2.7
Home Economics	24.0	3.6	15.0	3.9
Office Occup.	15.5	29.3	17.0	29.9
Technical	7.0	0.7	9.0	0.7
Trade and Indus.	26.5	49.7	30.0	49.7

SOURCE: Office of Education.

For example, in 1957 63,300 people were employed in the Agriculture-Forestry industry, and 92.51 percent of those could have been trained by the program of instruction in Vocational agriculture; hence 92.51 (63,300) = 58,600 of those could have been trained in agricultural programs. The same applies for mining: .0114 (67,400) = 700 of those who work in mining could have been trained by instruction in agriculture. These same ratios, applied to 1975 show the changes estimated to occur by that year. These ratios will have secular changes and cyclical swings, but can be used with some accuracy.

Impressions from the Analysis

If this information is matched with financial information[1] from the States, we can determine how expenditures for vocational education compare with trained manpower output under ideal conditions.

We say ideal conditions because the numbers trained are those who could have been employed by the relevant training experience. The data do not indicate the availability of jobs; it speaks only of the number of people who could have held jobs in a particular industry as a result of the training experience in a vocational category.

The first impression received is that the vocational education program in West Virginia could have trained 90 percent of all gainfully employed in 1957, which is substantial. In 1975, it will train 88 percent. However, high percents of needed manpower are trained in industries that appear to be declining in total employment, for example, agriculture. On the other hand, industries that are growing, Finance, Insurance and Real Estate, Services, and State and Local Governments, will remain about the same proportion in 1975 as in 1957. The question is whether the industries which are growing would have been stimulated to grow more by providing more trained manpower and whether the system should continue to press resources into training nearly 100 percent of the employment for areas of declining employment. Adjustment must at least be made for industries that are shifting from one locale to another. Further, to train year after year for total needs in a nationally declining industry and fail to train for total needs in an industry that is growing raises real questions of the relevance of current State investments. One may ask: Do the high loss rates relate to this lack of program relevance? Another question is how does the relative expenditure in the present "mix" compare to the economic contribution which other "mixes" would make to the trained manpower pool? Employment in 1957 and the estimates for 1975 are shown in Table IV.

The data indicates that the answers to both these questions should provide more relevant employment training in West Virginia in 1975. Of course, if it is the purpose of a State's vocational program to offer a high proprotion of out-migrant training in industries whose growth is elsewhere, re-oreintation of program support may be as necessary, particularly if Federal funds were extensively used.

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[1] Statistical and Other Information about Vocational-Technical Education in West Virginia." Developed and prepared by the Committee on Research, Bureau of Vocational, Technical, and Adult Education, Charleston, West Virginia, January 1066, p. 48

Projections by Categories

Table V is an attempt to demonstrate how curriculum investment patterns might be linked to employment projections. Certain gross trends are evident.

Enrollments in both Agriculture and Home Economics categories considerably exceed demands for trained personnel in those areas. There is an additional question about whether one should train for the low level of skills and earning capacities in areas with low employment potential. Further, the potential projected enrollments are national figures which may reflect accurately the current trends in Appalachia. Most U.S. students are in large metropolitan areas which frequently do not offer courses in Agriculture and Home Economics. Also, the national projections do not reflect the fact that there are high enrollments in Agriculture and Home Economics in Appalachia due to the total absence of other vocational program alternatives in many counties.

Schools, in the example, fall short of meeting the demands in the Trades and Industry category. This is the most useful and appropriate area of skill training for dropouts. Recently announced national policy encourages greater participation of industry in the low-skill unemployment area. As industry works with youthful unemployed, schools should be working with industry to better prepare students for industrial work.

Low demand for health occupations employment in the Region reflects its inadequate infra-structure. It may be that over-production in this high-wage skill critical area will increase the demand for such personnel in the Region. Certainly, lack of health services indicate that the demand should be increased. More work is needed in developing job and skill requirements below the professional level in the health fields to begin to meet national and regional objectives.

The model shows a disproportionate production of Office Occupations personnel, a major area for female employment which includes such rapidly-growing areas of demand as the computer-related occupations.

The model suggests that Trades and Industries and Office Occupations might usefully replace Agriculture and Home Economics as major program investment areas in the Region.

Some of the above implications suggest the policy judgments which must also be applied to a refinement of this predictive model for the Region. Such normative data does not even take into account major State and national program goals which have manpower implications for the future. For example, no demand is currently reflected for sub-professional educational personnel, although a tremendous number may be required to institute early childhood programs and provide other needed educational services. If urban services of all types are to be provided for the Region, methodologies must be developed to project, with relative accuracy, the manpower needs resulting. The Committee and staff are currently working on the necessary data and methodologies to develop relevant occupational education policies for the Region.

However, needs for para-professional personnel in health and education could provide a means to revitalize Home Economics curricula and justify a continued high investment in this area.

Further, increased training in Office Occupations, many offerings in Trades and Industries, and Distributive Education, will necessiate a concomitant preparation at the elementary level in communication skills and a decrease in accent on the "formal" academic curriculum offerings. Occupational Preparation in one form or another should permeate all the way back to the elementary school and forward to adult education, as this affects the aspirations and choices of children through their parents.

APPENDIX B

Historical Problems, Definitions, and Critiques of Current National Programs

One of the most comprehensive studies made of the Role of the Secondary Schools in the Preparation of Youth for Employment is a report by that title issued by the Institute for Research on Human Resources of the Pennsylvania State University in February 1967. Financed by a grant from the U.S. Office of Education, the study extended over the two-year period 1964-1966, and had two general objectives. One was to "assess in their actual setting. . . vocational-secondary school programs and the extent to which they are meeting the needs of the students and communities."[1]

The other objective was "to assess the vocational and technical education curriculum. . . when compared with other high school offerings that feed into the employment stream: i.e., college preparatory curriculum graduates who do not go on to college and graduates from the general curriculum."[2]

To achieve data to make these assessments, 5200 graduates of the three broad secondary curriculum areas--vocational, academic, and general--were personnally interviewed, and 3200 additional graduates were contacted by mail. The results of this extensive interview and mail questionnaire program covering 8400 graduates from the school systems studied, and an intensive on-the-spot investigation of the vocational education program in each of the systems, led to a set of conclusions regarding, among other points, the adequacy of vocational education programs. Some of the impressions conveyed in this extensive and recent research are set down here, and the assumption--explicit--is that strengths and weaknesses of vocational education as reflected, in a reasonable way, mirror the strengths and weaknesses of vocational education in Appalachia. In addition, it is assumed explicitly, that the effort recommended in this study to strenthen and improve vocational education in general will, if carried out in Appalachia, improve vocational education in the Region.[3]

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[1] Jacob J. Kaufman, Carl J. Schaefer, Morgan V. Lewis, David W. Stevens, and Elaine W. House. The Role of the Secondary Schools in the Preparation of Youth for Employment. Institute for Research on Human Resources, Pennsylvania State University, University Park, Pennsylvania, February 1967. p. 1 - 3, Hereafter cited as Role.

[2] Role, p. 1 - 2.

[3] To use a larger study as an analogue model for a lesser area can be very misleading, but if the specific points are carefully weighed, this approach can save many expensive research hours and expedite efforts to identify and locate specific points where assistance to vocational education programs in Appalachia may be applied.

The vocational program by long-standing use, dating back to the Smith-Hughes and George-Barden Act, have been classified into "occupational categories" that give a degree of homogeneity to the several instructional areas. While it is true that the Vocational Education Act of 1963 did not use the traditional classifications of vocational categories used in previous legislation, nevertheless the long-standing use of these classifications has been a basis upon which an administrative structure and data reporting system has been built. The essentially local nature of vocational education, despite the long history of Federal support, has permitted a wide variety of administrative patterns to emerge with concomitant appearance of great variety in statistical reporting--reporting that has made the "occupational categories" somewhat less than mutually exclusive classifications and their definitions in day-to-day operational terms a matter of local convenience. These occupational categories are defined as follows:

Agriculture education is[1] . . . a systematic program of instruction for public school enrolless, out-of-school and post-high school youth, and established farmers, organized for the purpose of improving agricultural methods and rural living. Objectives are to develop abilities to: make a beginning and advance in farming; produce farm commodities efficiently; market commodities advantageously; conserve soil and other resources; manage a farm business; maintain a favorable environment and participate in rural leadership activities.

Distributive education[2] . . . includes those occupations followed by proprietors, managers, or employees engaged primarily in marketing or merchandising or service. Such occupations are found in various business establishments, including, without being limited to, retailing, wholesaling, manufacturing, storing, transporting, financing, and riskbearing.

Technical education[3] . . . education to earn a living in an occupation in which success is dependent largely upon technical information and understanding of the laws of science and principles of technology as applied to modern design, production, distribution and service. . .

Trade and industrial education[4]. . . instruction which is planned to develop basic manipulative skills, safety judgment, technical knowledge, and related occupational information for the purpose of fitting persons for initial employment in industrial occupations and upgrading or retraining workers employed in industry.

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[1] Role, p. 5 - 1.

[2] Role, p. 5 - 7.

[3] Role, p. 5 - 16.

[4] Role, p. 5 - 20.

Office education[1] is defined as. . . a vocational education program for office careers through initial, refresher and up-grading education leading to employability and advancement in office occupations. . . those activities performed by individuals in public and/or private enterprises--which are related to the facilitating function of the office. They include such items as recording and retrieval of data, supervision and coordination of office activities, communication, and reporting of information regardless of social, economic or governmental organization in which they are found. . .

Home economics[2] education is. . . a program of instruction which is planned for the purpose of assisting youth and adults to understand and solve problems in home and family living and/or to prepare for employment and upgrading in occupations involving knowlege and skills in home economics subjects. Subject matter areas include: child development; family relationships; food and nutrition; clothing and textiles; family economics and home management; housing, home furnishings and equipment; and, family health.

Health occupations were not covered in this study since it has only recently appeared as a vocational education program.

When one examines these definitions, keeping in mind that they are operationally applied in 50 states and in whole or in part by over 22,500 school districts, the opportunities for imprecision are abundant. One administrative unit may emphasize, in the definition, target groups; another, incidence of employment; another, materials one deals with; and still others must emphasize levels of economic activity and type of organization. The point is, that any data in the present collecting system is imprecise. This situation is not likely to change quickly and thus one must either use what is available, or do without.

The data used in the report prepared by the Institute of Research on Human Resources, when the data are applied to the vocational programs, is thus based on the imprecision as suggested above, and the impressions the report conveys must be interpreted in this light.

For Appalachia, this means that we are using an analogue model to reflect on the regional characteristics of vocational education in the secondary schools. With this caveat, let us consider vocational programs individually and their implications for vocational education in the secondary schools of Appalachia.

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[1] Role, p. 5 - 37.

[2] Role, p. 5 - 44.

Vocational Agriculture. In medium-sized communities, the main emphasis is on floriculture and horticulture, with consideration given to agriculture business and agriculture mechanics. Ornamental horticulture is geared to slower students, and when trained, are considered semi-skilled workers. Floriculture graduates, if enrolled four years, are considered skilled workers. Few paper and pencil tests are given because the teachers concluded that ". . . tests might prove of questionable value, as many of the students were not quite of average ability, and were often very poor readers." [1] Programs were developed with the aid of advisory committees, and while students generally tended to be of below average ability, the teaching was enthusiastic and the instructional staff competent.

Guidance was given by the teaching staff, rather than school counselors, once a decision was made to enroll in the agriculture program.

Distributive Education. For the most part, educational experience in distributive education is limited to the 12th grade. In Appalachia, almost 60 percent of the students are lost by then! It is the only vocational program that seems to attract near equal ratios of boys and girls. While the aims and objectives of the program are generally regarded as sound some objectives are so broad that they are meaningless. Enrollments tend to be low, guidance is weak, and there is little planning for program growth and expansion. Students in larger communities appear only mildly interested in their work, and the instruction was not of high quality. In some cases, the sale of products made in the schools tend to dominate the instructional program. Placement of graduates appears excellent, and the problem of change in the business community seemed well handled by the instructional program content. Perhaps the greatest strength is the acceptance of change, the greatest weakness in the infinitesimal penetration of the program into the possible student enrollment--only about 2 percent of the 9th to 12th grade enrollment appears to be reached by the distributive education program.

Technical Education. Technical Education programs appear to be offered in only about one-half of the communities, and less than 3 percent of the student population took advantage of the offerings when they were available. This points out the accented need for earlier information on occupational choices. Further, graduates trained in technical programs do not appear to enter the occupations for which they are trained, and the programs are not considered to have made an impact on the local labor market. On the positive side, the physical facilities appear adequate, the instructional staffs are well trained and maintain an excellent rapport with their pupils, yet the counseling facilities were poor quality and generally uninviting.

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[1] Role, p. 5 - 4

One of the unusual aspects of the program is its small impact on the communities. In this connection, few girls were enrolled, and there seemed to be little response by the schools to the employment needs of the immediate area. Industry advisory committees (used at the junior college level) seem to be the best method of counterbalancing this trend.

Trades and Industry. The largest number of students which could be identified as "vocational students" tend to be enrolled in Trades and Industry Programs, and 67 percent of them are placed in occupations for which their training is relevant. Such a high placement rate suggests that the programs have been developed to meet the established needs of the community. On the other hand, many community needs exist which can and should be met. In the community at large, less than 20 percent of the enrollment in vocational education is in Trades and Industry, despite its high relevance for community needs. Further, this appears the only program that consciously seeks, through curriculum design, to give some vocational training experiences to students who are identified as having a high dropout potential.

There appears one major weakness in the Trades and Industry program and that is the failure to use advisory committees. In an area where apprenticeship experiences are so important, this is a major plan in the program that needs immediate attention. As in most other areas of instruction, guidance is extremely poor, and followup- almost lacking. Counselor ratios are often as high as 600 students to each counselor and never lower than 280 to one--the average is 440 to one. In Appalachia, the ratios are 1-1,200.

In many cases, student selection is poor. Color blind students are enrolled in courses requiring color perception; poor and slow readers were enrolled in courses requiring at least average reading ability, which may account for some of the lack of the ability of students to master the course material makes it impossible to place some graduates in jobs.

The lack of quality programs for girls in Trades and Industrial education is severe. Courses in cosmetology, needle trades, and commercial foods are needed. There is some confusion on what vocational category these courses might come under. Some would say these are Home Economics offerings and no doubt there are many cases in Home Economics where these skills are taught. To find out how deficient courses are in Trade and Industry for Girls, a substantial study should be made of this curriculum. This points out further the problems inherent in present reporting system.

Office Courses. Courses of instruction in office occupations have long been offered in secondary schools--typing, shorthand, bookkeeping and so on. Not until the Vocational Education Act of 1963, were these considered a part of the vocational education program. In many cases, students enrolled in these programs are preparing not only for immediate employment after graduation, but also for college admission. In some cases, students "play" these courses for the best of all possible worlds--admission to college if possible;if this fails, then their skills help them secure immediate employment. Thus, enrollment in these courses may not reflect a true vocational aim in the sense of immediate employment after graduation.

For the most part, office education programs are not supported by part-time cooperative work experience, and little or no use is made of advisory committees.

There is one administrative facet of office education that is worth noting Whether data processing is a vocational education activity is open to question. One school did not consider it so, and the entire student enrollment was college preparatory youth--not one was a business education major.

The instructional validity of office education programs is high. Class sizes, largely determined by available equipment, are not too large.

Counseling appears better in the office education program than in others, but the case load is extremely high. For the most part, programs are flexible and accommodate students with a wide range of backgrounds.

Home Economics. Programs in Home Economics appear in just about every secondary school. As can be seen from the definition, the program is extremely broad and contemplates the preparation not only for home making, but also for related employment opportunities. In this connection, there are great variations in course titles and wide variety in the times per week the courses meet.

For the most part, girls enrolled in home economic courses do not plan to continue their education beyond high school, and the courses are oriented with very few exceptions, to homemaking, rather than occupational preparation. By and large, the students in these courses are "low achievers" and "with very little in the way of educational or vocational goals". Most of the courses center around food preparation and clothing construction, and when occupational preparation is a goal, it is postponed until the 11th or 12th grade before it is pursued intensively; but whenever this is so, the preparation centers around food preparation and closing construction, which tends to be "more of the same" type of instruction offered for family-centered instructional purposes.

For the most part, physical facilities are good and the instructional staffs in home economics are excellent. Many of the staff members are trying to give greater emphasis to job preparation indicating that they are aware of the changing structure of the labor force and the ever-enlarging participation of women in the world of work. Yet, there is a feeling of frustration among much of the staff, accentuated by the low calibre students assigned to the program by counselors. Some of this frustration and low morale seems to originate in the low support given to home economics programs by the administrative structure.

Perhaps nowhere in the existing program structure does a greater opportunity exist to orient and re-orient the vocational offerings to current needs than in home economics education. With the rising trend of women participating in outside employment, opportunities exist to restructure the offerings without incurring large expense. Existing facilities, combined with already existing program structures offered by the U.S. Office of Education, could fill a real need in satisfying the job markets in institutional and motel housekeeping, child care, and nursery school programs. This re-structuring of program offerings needs only a reorientation of the administration and an awareness of the continuing presence of women in the nation's labor force.

APPENDIX C

Formation and Operations of State Education Committees

The purpose of this paper is to describe, in detail, projected purposes, operations, membership, and outputs of State Education Committees. Necessarily, the details will be dependent on the joint judgment of the State-appointed Education Advisory Committee members, working with the ARC representative or members of his staff.

As it is envisioned that the operation and activities of these Committees will require a certain amount of time, the ARC representatives should consider assigning a staff member major responsibility in the area of education to ensure continuing liaison with educational planning activities. The Kentucky ARC office has already employed a part-time consultant in this capacity.

Mission

A. Purpose: (1) Examine the educational system within each State's Appalachian section and to develop plans relating to the system's educational strengths and weaknesses, and

(2) relate educational planning to overall economic development planning.

The planning aspects of the State Committees' work involve:

1. Determination of local and State problems in education, including the effects of State and Federal legislation
2. Determination of priorities within educational and community needs
3. Consideration of alternatives for selection of optimum needs to meet the priorities set
4. Assessment of existing local, State, and Federal resources that can be applied to these priorities with particular emphasis concerning optimum use being made of these resources
5. Identification, in detail, of resource gaps where priorities cannot be met by existing resources; providing recommendations to the Education Advisory Committee.

It is obvious that problems identified may require local or State action; particularly, those involving such things as finances, State or local restrictions, committee attitudes, personnel shortages, etc. Action on these problems should take the form of agreements for local cooperation, or recommendations to State Departments of Education and the Governor.

B. In all of the Appalachian States, the ARC requires investment plans for the expenditures of ARC monies in each State. The State Committees should be used to develop the educational component of such plans. It is recognized that this use of the State Committees is one which will not be put into effect in all Appalachian States immediately, but it is strongly recommended that State Committees eventually assume this function.

C. A further mission of the State Committees will be to act as a "constituency" providing a visible and unified voice for educational needs of the Appalachian Region within each State. It should, therefore, concern itself with formulation of specific programs and other recommendations to the State Legislature and the Governor concerning:

1. Allocation of State and Federal dollars within the States; and

2. Needs for additional assistance from the State Department of Education.

D. Endeavor to coordinate educational planning with overall economic investment planning. In States containing a large number of Appalachian counties, it is recommended that county and city school superintendents be trained to serve on Area Development Councils where such exist. This will:

1. Provide them with relevant information on the place of education in local economic development,

2. Give them perspective beyond the artificial geographic boundaries of their immediate school districts,

3. Provide an educational component and commitment to sub-regional economic planning, and

4. Provide the Area Development Councils with necessary educational expertise and information on industrial prospects.

Membership

The membership for such State Committees should be jointly selected by the State appointed members of the Education Advisory Committee and their ARC representative. Actual membership will be determined by assessment of educational acumen, political strengths, and geographical representation with the Appalachian portions of the State.

The membership should include educational personnel, such as local and State vocational educators; school superintendents; junior college, college, and university representatives

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The membership should include educational personnel, such as local and State vocational educators; school superintendents; junior college, college, and university representatives. Other members would include ARC representatives or staff, key State legislators, industrial and labor leaders, members of State education commissions, and possibly, representatives of local and national educational associations and selected lay members.

It should be emphasized that actual selection of State Committee membership is the decision of the State Education Advisory Committee and ARC representatives. It is hoped that State Committee membership and character will emphasize the Appalachian portion of each state, although representation might include persons from elsewhere within the State.

Sub-regional Committees

The most effective State Committee to date is that in Maryland. In addition to excellent organization and hard work by Dr. Brish, this is due to the relatively small size of the Appalachian portion of Maryland. Many of the achievements of this Committee are due to direct contact and control over the local educational environment. This suggests that sub-regional committees corresponding in geographically-limited boundaries (although possibly going across State lines where feasible) might be formed in order to accomplish maximum cooperation and use of local resources to achieve educational priorities.

One of the major benefits of the Education Advisory Committee's activities will be local community action through the educational power structure. North Carolina, for example, is already beginning to form sub-regional committees. The Education Advisory Committee staff will develop additional position papers concerning suggested attitudes and relationships to the State and regional committee. Such sub-regional committees might very well be composed on similar lines to the Maryland State Committee and should include membership from the State Committee in each State, as well as heavy accent on the sub-regional educational community.

Beyond considerations of community action and local cooperation, such LDD-oriented sub-regional committees might form the basis for intermediate educational service units similar to New York's Board of Cooperative Educational Services (BOCES). These, in turn, might provide the organizational base for educational support, through Title III of the Elementary and Secondary Education Act, and provide a viable alternative to school consolidation where problems of politics and transportation appear insurmountable.

State Committee Administrative Considerations

The following administrative recommendations are based on successful experience with those State Committees already operating. They are in the form of recommendations only.

1. The ARC representative or members of his staff should be present at all meetings of State Committees. Participation can be either active or passive depending on Committee activities, but the presence of ARC office personnel is necessary to provide the liaison and educational information for the ARC office and continued approval and interest by that office in Committee activities.

   Both the Education Advisory Committee and the ARC representatives should continuously accept the community action "spirit" of the Appalachian program beyond the program and dollar consideration.

2. Minutes should be kept of all meetings and distributed to members of the State Committee, sub-regional Committee, as formed, the ARC office, and the Education Advisory Committee.

3. Meeting Place. The Maryland State Committee has been rotating its meeting place from one county and educational facility to another. This provides an excellent opportunity to each Committee member for host participation, and further the opportunity to observe activities in different parts of the Region. Again, in the case of Maryland, free lunches were provided for Committee members at various schools.

4. Currently operating State Committees have insured continuing participation and action by giving out "homework" assignments to Committee members for reports at the next session. This seems to be an excellent procedure in developing both planning and project activities on a cooperative basis.

5. Where need, State Committees should enlist support of responsible local and State agencies to provide them with data and information for evaluation of educational conditions within their area of concern.

6. With an increasing emphasis on the "poor", the growth of community action agencies, the considerable resources of information and personnel such agencies have, the State and local committees should consider holding open hearings from time to time. The purpose of these hearings would be to provide an open forum for airing of citizen complaints. This will provide for participation of the consumers of education in the planning process. It may further provide

access at local level to the considerable personnel resources of the "poverty people" on a cooperative rather than a competitive basis.

Results

Each State Committee should deal with some of the following areas, as part of its activities. Some of the possible products of State Committee activity are listed below:

1. Establishment of educational priority areas.
    a. Agreement for allocation of existing funds at all levels for these priorities with particular emphasis on Federal funds, providing a wide range of activities using such funds as Title I of the Elementary and Secondary Education Act and the Higher Education Act of 1965.
    b. Decisions about "gap" or needs areas to show where additional Appalachian Regional Commission funding is necessary.
2. Recommendations to:
    a. State legislatures and Governors re additional needs and programs as well as the mediation of legal constraints necessary for additional development.
    b. State Departments of Education re needs for additional technical assistance, cooperation, and adjustment of State Department regulations to permit fulfillment of priorities established.
3. Projects--ideally cooperationally funded and operated with mixes of local, State, Federal, and ARC funds.
4. Establishment of consortia, and other working cooperative and information arrangements, between all components of the educational system. Such might include planning and program activities ideally at a sub-regional level between colleges, universities, junior colleges, post-secondary area technical schools, school districts, and State Departments of Education, or any combination thereof.

Examples of this might be:

1. Agreements between the State Department of Education and higher education institutions to have the latter provide technical assistance, proposal development, planning, evaluation, and reporting services to the school districts.

2. Joint planning between responsible State education agencies, manpower and labor agencies, school systems, and post-secondary technical institutions to provide the maximum number of vocational and technical curriculum offerings on an induplicate basis within geographic areas of service.

If possible, planning efforts such as listed in "2" above should cross State lines.

Funding

Currently, State Committees in operation are employing the volunteer efforts of their members on an un-reimbursed basis. Where this is possible and commitment remains high, such practices should be encouraged and continued. Should the State-appointed members of the Education Advisory Committee determine that funding for travel and expenses might be necessary to insure participation of the Committee, they should seek such funding from the State ARC representative or other sources.

Possible sources of such funding include --Appalachian Regional Development Act, Section 302; Housing and Urban Development Act, Section 701; Elementary and Secondary Education Act, Title V(a), as well as others.

Role of the Education Advisory Committee and the Education Advisory Committee Staff in Relation to State Committees

1. Provision of technical assistance includes:
    a. Assistance in establishing and operating initial State Committee efforts
    b. Assistance in obtaining outside consulting help, as the needs may arise
    c. Providing guidelines and matrices for planning
    d. Providing information on alternative sources and model programs for adoption
    e. Providing assistance in obtaining funding from Federal sources for project development, as well as any assistance needed in funds for operation State Committees
2. Provision of reports and information to State Committees and the Appalachian Regional Commission concerning:
    a. Progress in educational planning and project development
    b. Trends in State and regional educational activities
    c. Use of Federal funds
    d. Recommendations for support of educational legislation and additional proposed legislation for the Appalachian Program.

3. Act as a clearinghouse of information between State Committees

As State Committee activity develops, there will be a need for additional, as yet unspecified, services which will be noted as the occasion arises. The first of these will be the delineation of a formal community system between State, sub-regional, regional and Appalachian Regional Commission activities.